ELECTRICAL SOUTH

MAY 1947

A Monthly Journal for Electric Power Companies, Electrical Contractors, Wholesalers and Dealers.

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HUNTER FANS.

Plant owners are searching for the simple, inexpensive method to produce summer comfort and keep production at top levels during the hottest weather. HUNTER ZEPHAIR fans offer the ideal solution because of their unexcelled quality and outstanding performance. This modern Coca Cola bottling plant in Houston, Texas, is one of the many plants using HUNTER fans.

Coca Cola Bottling Plant
Houston, Texas

EASTERN SALES OFFICE:
NEW YORK
92 WARREN ST.

WESTERN SALES OFFICE:
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Sales Offices:
Atlanta, Chicago, Dallas, Houston, Los Angeles, Philadelphia, Boston, Cleveland, Detroit, Kansas City, New Orleans, Pittsburgh

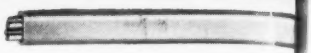
HUNTER FAN & VENTILATING CO., INC.
General Sales Office:
400 S. FRONT ST., MEMPHIS, TENN.

SHERARDUCT

Full weight, threaded rigid steel conduit.
"Sherardized" for enduring service.

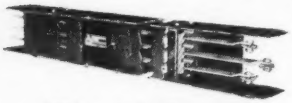
XDUCT JUNIOR

Thin wall Electrical Metallic Tubing.
Electro-galvanized.



METAL MOLDING

3 sizes with the "lay-in" princ
Smooth, neat appearance

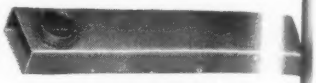


IPI and IFB BUS

PLUG-IN and FEEDER BUS systems.
Just plug-in the loads.

PLUG-IN STRIP

Wired multi-outlet assembly
Outlets every 18"
For real convenience.



NEPCODUCT

Modern under-floor wiring s
For power, light
and communication circu

Modern electrical systems for every requirement

ELECTRICAL WIRE AND CABLE

Bare, insula
mored and
wire and c
every locatio
quirement.
line of boxes a
for all install

GORILLA GRIPS

Precision connectors.
No special tools required.

SURFACEDUC

2 1 8" x 1 5 8" raceway for
amp. *Lay-in the wire*
Snap on the capping

Since 1905, National Electric has been a leader in meeting the ever-changing demands of the Electrical Industry.

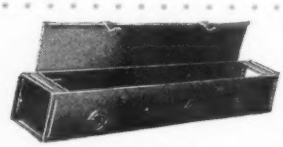
Today National Electric enjoys an enviable reputation as a trustworthy source of supply for complete wiring systems and fittings for every conceivable electrical requirement.

A.B.C. CABLE

Flexible steel armored bushed cable.
The bushing protects the wires.

FLORDUCT

Beveled, across-the-floor rac
Withstands the bumps



WIREWA

Accessible 4 x 4 industrial wireway.
For circuits up to 600 volts.

LOOMWIRE

Non-metallic sheathed cab
Complete line of Loomwire fit
and boxes available

NATIONAL
ELECTRIC PRODUCTS
NE
WIRING 6 SYSTEMS
WIRES AND CABLES

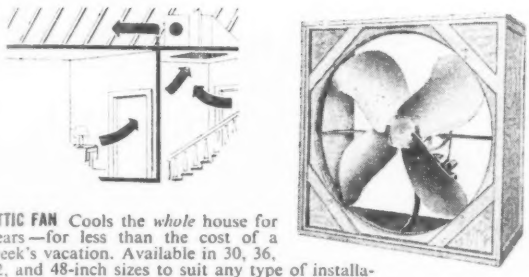
All N. E. products are approved by Underwriters' Laboratories

• Sold nationally through Electrical Wholesalers

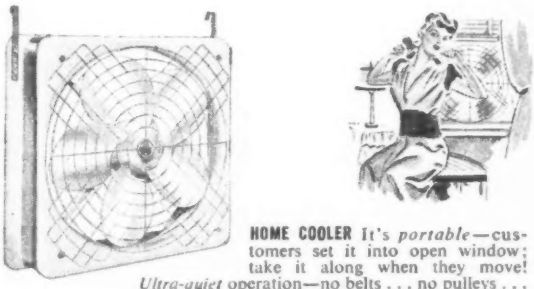
National Electric Products Corporation
Pittsburgh 30, Pa.

DE LUXE FAN Body, base, and blades in lustrous pearl-essence finish with contrasting silver striping and bright guard. Modern, durable die-cast motor body and base. Totally enclosed oscillating mechanism. Wide, overlapping 10, 12, and 16-inch blades give unusually quiet delivery of large air volume. Three speeds on 12 and 16-inch fans. Price includes bracket for wall mounting. Guaranteed five full years.

BANNER FAN Popular priced. Gives big air delivery at low current cost. Lustrous dark brown finish. Streamlined, sturdy die-cast motor body and base. Totally enclosed oscillating mechanism. Wide, quiet-running 10, 12, and 16-inch blades. Two speeds on 12 and 16-inch fans. Wall-mounting bracket included. One full year guarantee.



ATTIC FAN Cools the *whole* house for years—for less than the cost of a week's vacation. Available in 30, 36, 42, and 48-inch sizes to suit any type of installation. Fan operates in any position because ball bearings are used throughout. Quiet-running—motor mounted on live rubber; blades driven at slower speeds. Four wide, scientifically designed blades within true Venturi Ring that eliminates excessive "air whip" and inefficient re-circulation.



HOME COOLER It's *portable*—customers set it into open window; take it along when they move! *Ultra-quiet* operation—no belts . . . no pulleys . . . motor mounted in live rubber. Rich ivory finish. A space-saver—extends only 6½ inches into room! In 24 or 30-inch sizes to fit most windows; in 24-inch size mounted on adjustable stand. Three speeds on all models. One full year guarantee.

PEDESTAL FAN Pearl-essence finish on blades, motor housing and base. Brightly finished guard. Adjustable for height—12 and 16-inch models from 38 up to 62 inches; 10-inch fan from 35 to 59 inches from floor to center of guard. Wide, quiet-running, overlapping 10, 12, and 16-inch blades. Totally enclosed oscillating mechanism. Two speeds on 12 and 16-inch fans. Guaranteed five full years.

Here They Are!

R & M NATIONALLY ADVERTISED FANS!

As complete an assortment as you could ask for. Styles to suit every taste. Prices to fit all purses.

And they're *good* fans—backed with 50 years of fan-making skill. They're business-builders for you, too. They give your customers the one thing that brings them back—satisfaction. For you are authorized to repair or replace any R&M Fan found to be defective during the life of the guarantee.

National advertising helps you merchandise them. Point-of-sale material, newspaper mats, and other sales stimulants (all at no cost to you) help you sell them. So, see your nearest R&M Fan distributor OR mail the coupon for his name, address, and literature on this fast-selling R&M Fan line.

ROBBINS & MYERS, INC. SPRINGFIELD, OHIO · BRANTFORD, ONT.

MAIL THIS COUPON *today!*

ROBBINS & MYERS, INC.
Fan Sales Division, Dept. F, Springfield, Ohio

Please tell me who my nearest R&M Fan distributor is and send me new sales-promotion literature on the R&M Fans checked (√).

☐ Home Coolers ☐ Attic Fans ☐ Pedestal Fans
☐ Banner Fans ☐ De Luxe Fans

Name.....

Firm Name.....

Address.....

City.....*Zone*.....*State*.....

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Volume 27 Number 5

Model F56P. Has 16" oversize oven, three Kloz-Koil or Dura-Glaz surface units, 6-qt. "Side-Heet" cooker, three utensil storage drawers. Smokeless, porcelain broiler pan. Signal light for surface units — illuminated oven dial — appliance receptacle — and combination timer-notifier clock. Cooking top is 38½" x 22", 36" high.

Model LN6J6. Has 16" oversize oven with dependable automatic control. Drop-front, drawer type, broiler. "Hi-lo-reflex" burners with 2-position gas cocks and automatic lighter. Two utensil storage drawers. Modern light and notifier. Porcelain enamel exterior finish with chrome and white plastic trim. Cooking top is 38½" x 22½", 36" high.

TWINS

WITH these Monarch-built, twin-designed ranges on your floor, you can offer the woman who prefers *gas* or the woman who prefers *electricity* . . . . the same top-flight quality in modern range design. All the weight and strength of Monarch's half-century of range-building experience can be thrown behind the sales effort of your *entire* range line, both gas and electric — to give every range customer the very last word in up-to-the-minute cooking conveniences.

MALLEABLE IRON RANGE COMPANY

4857 Lake Street Beaver Dam, Wisconsin

RANGES AND HEATERS

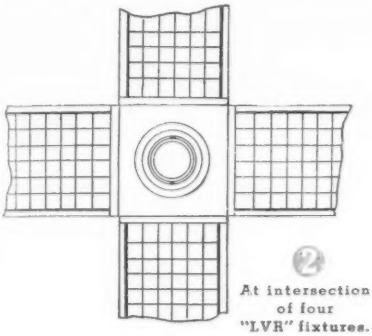
Monarch - Paramount

COAL - WOOD, ELECTRIC, GAS and COMBINATION RANGES

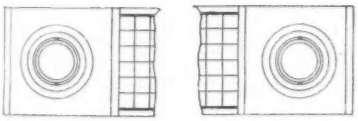
"LVR" ENGINEERING makes it easier to sell ENGINEERED LIGHTING

. . . and now the NEW SPERO SPOT UNIT gives you another PLUS!

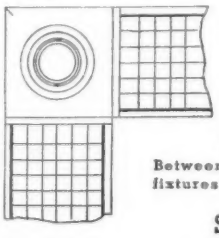
1 Large illustration shows the Spero "SULV-1" Spot Unit mounted between two "LVR-448" Fixtures. Designed also for the following combinations.



2 At intersection of four "LVR" fixtures.



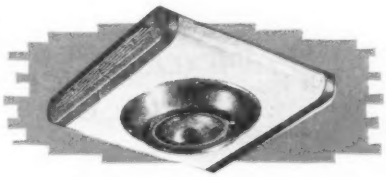
3 At ends of "LVR" fixtures.



4 Between two "LVR" fixtures at 90° angle.

Here's the fixture you've been looking for - a *correctly engineered* adjustable spot unit for use with SPERO "LVR" 448 fluorescent luminaires. It uses either a Par 38 or an R40 lamp with adjustment to any fixed position up to 45° from the vertical, within a 360° circle. "SULV-1" follows the contour of the Spero "LVR" and can be mounted in 4 combinations with the "LVR" (see sketches at right) or individually.

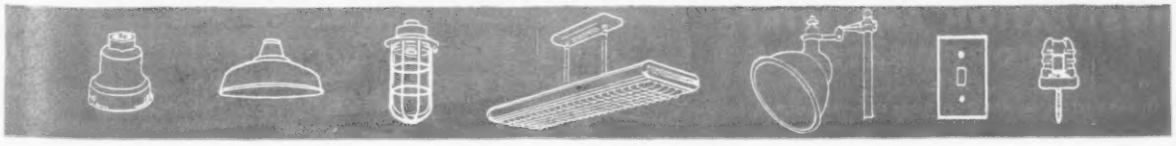
The Spero "SULV-1" Spot Unit gives you another plus to help you sell "engineered lighting". Write for information.



Spero "SULV" Spot Unit for separate mounting has the same end pieces as the "LVR".

Spero also manufactures Reflectors, Floodlights, Vapor Proof Units and various Materials for Electrical Construction. Write for Bulletin No. 10.

The SPERO ELECTRIC CORP. 18222 LANKEN AVE. CLEVELAND 19, OHIO



Avoid Costly Comebacks With Dependable Equipment and Materials

PEDIGREE INSULATING VARNISHES

...The Product with a Pedigree!

Every *PEDIGREE VARNISH* sold has been tested and service-proved by some of the world's largest electrical manufacturers. *PEDIGREE* means the best in the field — impregnating varnishes — varnishes for baking or drying — finishing varnishes — protective sealers — sticking varnishes — insulating compounds — machinery enamels.

Whether you need protection against oil, acid, alkali or moisture — protection against heat — maximum insulating qualities — tough and flexible coatings — *PEDIGREE* provides the *right* product to do the job *right!*

Insist on *PEDIGREE VARNISHES* — guaranteed to satisfy or your money back. You won't get the best unless you say *"PEDIGREE."*

Send for Application Chart and Catalog

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...It Has What It Takes!

MACALLEN MICA is the universal choice in every shop doing quality, guaranteed motor service work. *MACALLEN MICA* has the highest dielectric strength of all easily worked insulation materials and is unaffected by heat.

Manufactured under exacting production controls to insure perfect accuracy, *MACALLEN MICA* is furnished in sheets in all thicknesses and sizes for moulding and cold forming, segments, and in every other form required for all shop needs.

Use *MACALLEN MICA* for your best jobs.

Samples and Prices Sent on Request

ACE SHOP EQUIPMENT

...Ace High In Service!

Fast, flexible, rugged, heavy duty Ace Equipment is adaptable to every type of job, from fractional sizes up to 100 H.P., quickly and easily.

Powerful *ACE WINDERS* will pull the heaviest wire for the largest coils in their range — have life-time non-grab, positive clutch control — gear and belt drives engineered to eliminate chatter — and will take all types of winding heads.

Sturdy *ACE COIL FORMERS AND SPREADERS* stand up under severest service—are smooth and positive in action.

Built to last a lifetime, an investment in Ace Shop Equipment pays dividends every year in satisfaction and profit. Shipment is prompt — from factory stocks.

Write for IWI's New Illustrated Equipment Catalog

Send for your copy of the IWI BLUE CATALOG

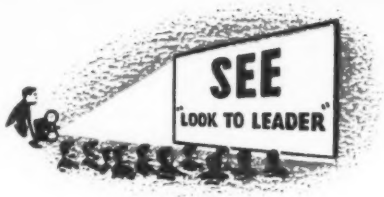
INSULATION AND WIRES INCORPORATED

Offices and Warehouses in

ATLANTA 3, GA. • HOUSTON 2, TEXAS • ST. LOUIS 3, MO.

Leader FLUORESCENT LUMINAIRES *Meet the Challenge of* EDUCATION

Leader VL—440—45° cut off. An especially fine fixture for classroom use. Low surface brightness with proper diffusion give pleasing soft light. Modern design for new modes in architecture.



An interesting, informative sound film on lighting trends, sales methods, potential markets. Make a date soon with the friendly Leader representative in your area to see and hear this new film.

EDUCATORS EVERYWHERE agree that in all branches of education—the vocational schools, the halls of learning in prominent universities, even in the little red school-houses—there is a crying need for better classroom lighting.

Leader has met this challenge to the lighting industry by extensive research and careful design of fluorescent fixtures for educational use. For better lighting to safeguard the sight of America's youth—for fixtures with lower surface brightness that raise the level of light above the students' eyes—Look to Leader.

Only better electrical wholesalers and contractors distribute and install Leader fluorescent fixtures.

LEADER ELECTRIC COMPANY

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WEST COAST FACTORY • 2040 LIVINGSTON ST., OAKLAND 6, CALIFORNIA

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...cover the Country...*for your convenience!*

The Trumbull distribution set-up is the outgrowth of careful initial selection and a continuous development and training program. We can truthfully say that our 333 Electrical Wholesalers, with their thousands of men, are well schooled in the Trumbull line . . . are exceptionally able and willing to give you the technical information required for modern electrical installations.

The Architect, whose specifications call for reliability, compactness, appearance . . . the Electrical Engineer who has specific problems to solve . . . the Contractor who wants delivery and competitive prices . . . the Production Manager who seeks cost cutting equipment, better power distribution and control, lower maintenance . . . all need localized service.

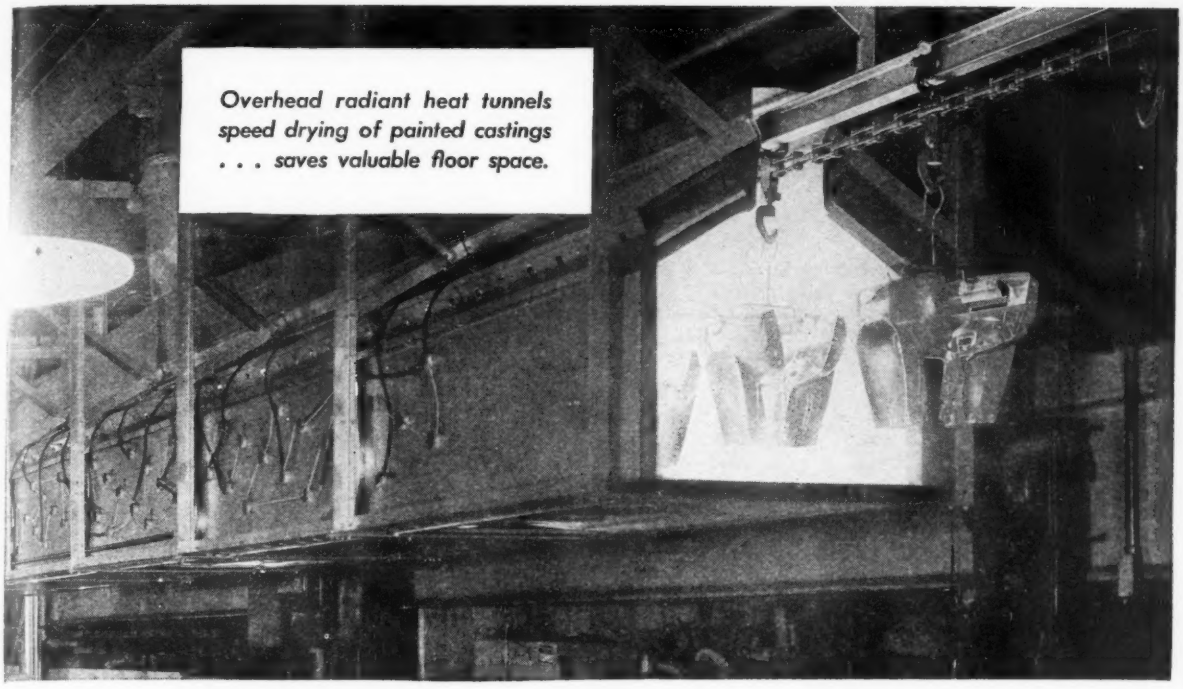
Trumbull Authorized Electrical Wholesalers will give it to them . . . from Maine to Miami —from San Diego to Seattle—in every important center from coast to coast.

Forty-eight years ago the Trumbull "Line" was *one* product . . . today it is complete . . . from the simple, inexpensive disconnect switch to interconnected Busways that distribute current throughout the largest industrial plants.

Whatever your requirements, wherever you are, there's an Authorized Trumbull Electric Wholesaler ready to serve you well.

THE TRUMBULL ELECTRIC MANUFACTURING COMPANY
PLAINVILLE, CONNECTICUT

OTHER FACTORIES AT NORWOOD, OHIO • LOS ANGELES • SAN FRANCISCO • SEATTLE



Westinghouse Infrared Lamps

Reduce Paint Drying Time 85%

DO THE JOB FASTER, EASIER, CHEAPER

- Baking enamel and lacquer finishes
- Preheating of metals and plastics
- Degreasing
- Mold Drying
- Dehydrating textiles and paper

If you're looking for "bottlenecks" to break, check into your present baking, drying and preheating methods—then get the facts on radiant heat processing with Westinghouse Industrial Infrared Lamps. Look at these advantages:

Fast—Infrared has proved itself for a wide range of industrial purposes as the fastest known means of drying and heating.

Efficient—90 per cent of the energy consumed is turned into heat.

Economical—Small initial investment, inexpensive maintenance, and small space requirements plus high production speed cut manufacturing costs.

Flexible—Wide adaptability for fixed or portable applications simplifies streamlining of whole manufacturing operation.

SEND FOR THIS BOOKLET: To explore the opportunities Infrared Heating offers, write for "Industrial Infrared Lamps" —Form A-3817. This complete guide to modern Infrared heat processing outlines the advantages of radiant heat, lists lamps used, shows typical installations and provides detailed information for specific processes. Address Westinghouse Electric Corp., Lamp Division, Bloomfield, N. J.

Westinghouse

LAMPS FOR EVERY INDUSTRIAL REQUIREMENT

WESTINGHOUSE LAMP DISTRICT OFFICES: 1299 Northside Drive, N.W., ATLANTA; 10 High St., BOSTON; 20 N. Wacker Drive, CHICAGO; 40 Wall St., NEW YORK; 3001 Walnut St., PHILADELPHIA; 32 B'lvd. of Allies, PITTSBURGH; 1 Montgomery St., SAN FRANCISCO; 411 N. 7th St., ST. LOUIS.

B1200

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B1500

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Increase your Sales

...with REGENT-SAVOY

PROFIT-MAKERS

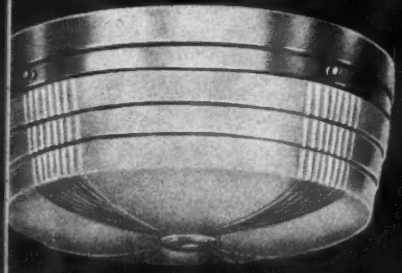
NOW READY FOR IMMEDIATE DELIVERY – this new, beautiful line of modern, no-glare incandescent lighting fixtures, designed and manufactured exclusively by REGENT-SAVOY Craftsmen.

Send for Folder No. 47A

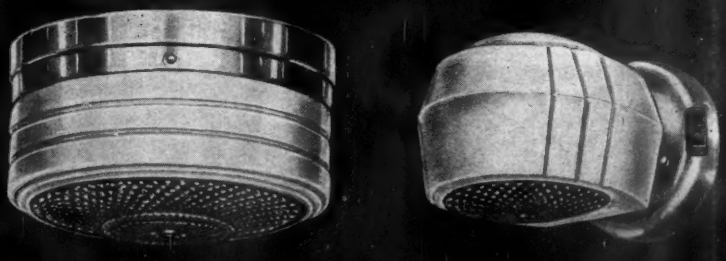
Produced with the same care and expert supervision that attained an enviable, national reputation for REGENT-SAVOY Products, these fixtures are proven sales leaders that assure you of quick turnover and extra profits.

Be the first in your community to display and stock this line of fast selling incandescent profit-makers. Write for full details, today.

REGENT-SAVOY *ELECTRICAL MANUFACTURING CORP.*
NEW ROCHELLE • NEW YORK



600 SERIES



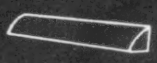
500 SERIES

DEPENDABILITY *Plus!*

★ *Polyphase Cabinets by* WALKER

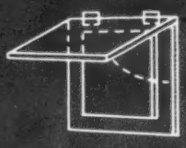
VENTILATING LOUVERS

Two screened ventilating louvers can be placed at top and bottom of each cabinet.



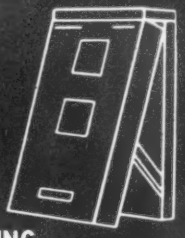
SPRING WINDOW FLAPS

Furnished with two meter windows and spring window flaps if desired.



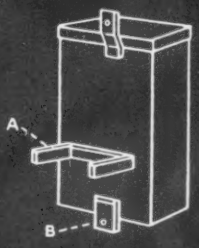
LID SUPPORTS

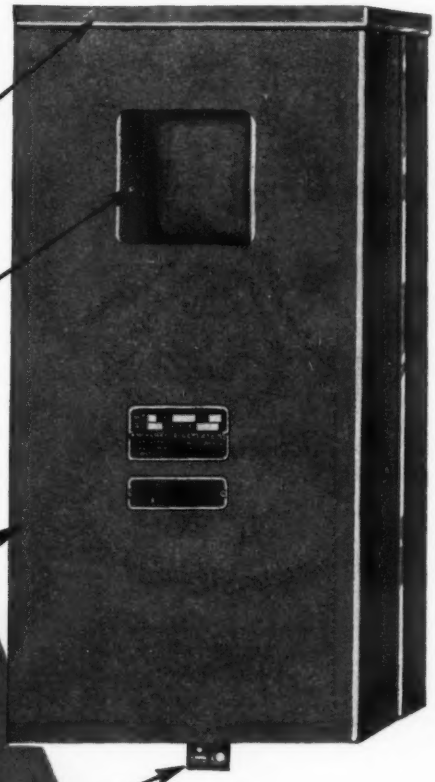
Can be equipped with removable cover, or with lid supports to hold cover up while working inside.



ALTERNATE MOUNTING

Furnished with either wall mounting (A), or with pole mounting (B).





Poplar wood backs are standard equipment at no extra charge.

★ WALKER *Meets Your Specifications*

Metering equipment especially designed to your own specifications is another WALKER service.

Your inquiries are invited. Specifications and requisitions receive our prompt attention.

WALKER ELECTRICAL *Company* *Atlanta*

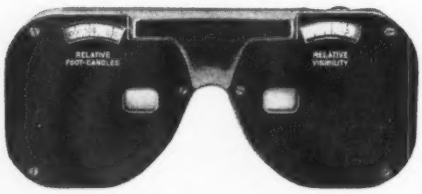
WECO ATLANTA

MANUFACTURERS OF SWITCHGEAR • PANEL BOARDS • SERVICE EQUIPMENT • METAL ENCLOSURES

Another General Electric

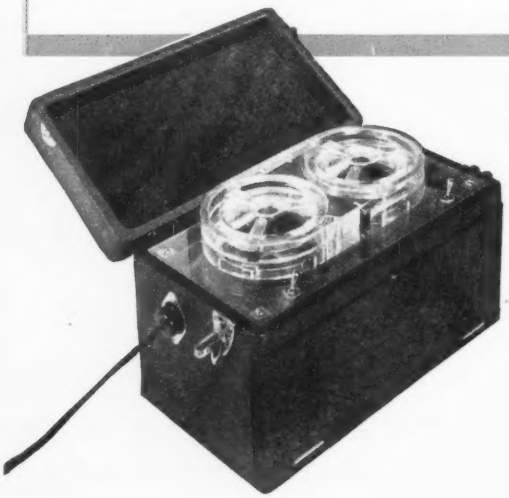
G-E LIGHT METER—A simple, convenient, low-cost device with numerous practical uses. Vest pocket size—only 2¼" square by 1⅛" thick. Has a full scale reading of 100 footcandles; with a multiplying plate, readings up to 1000 footcandles may be taken. May be used to measure reflection factor, transmission factor or brightness. Over 45,000 G-E light meters are now in use.

G-E LIGHT-SENSITIVE CELL—Has numerous uses in connection with light meters, reflectometers and colorimeters, as well as various control applications, including the control of street lighting. The G-E light-sensitive cell is a sturdy, inexpensive device which produces a measurable voltage in proportion to the amount of light striking its surface. May be equipped with a color-correcting filter, if desired.



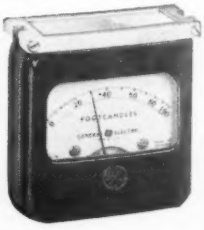
LUCKIESH-MOSS VISIBILITY METER—Used generally for determining the relative visibilities of various objects and tasks. Meter consists essentially of two identical colorless circular gradient filters, which are rotated in front of the observer's eyes while he views the object or task. Filters reduce the object to threshold visibility, and measurement of relative visibility is indicated on a scale.

LUCKIESH-TAYLOR BRIGHTNESS METER—The most fundamental factors in seeing—brightness and brightness-contrast—are now made easily measurable by this remarkable instrument. Brightness of the test object can be read in both candles per square inch and in foot-lamberts. Scale reads from 0.0045 to 0.11 candles per square inch, also 2 to 50 footlamberts. Range can be extended to 50,000 footlamberts by multiplying screens.



LUCKIESH-HOLLADAY-TAYLOR ELECTROSTATIC BACTERIAL AIR SAMPLER—An efficient, convenient, portable instrument for collecting air-borne micro-organisms and measuring their concentration—or the average number of bacteria per cubic foot of air. It provides a highly useful means of demonstrating the need for and the effectiveness of installations of germicidal lamps in restaurants, school rooms, hospitals, etc.

LUCKIESH-TAYLOR GERMICIDAL ATTACHMENT—A simple device for adapting the standard G-E light meter for measuring the bacteria-killing energy produced by germicidal lamps. Consists of an appropriate fluorescent material placed between a plain piece of clear quartz and one of clear glass. Intensity of germicidal energy is measured in microwatts per square centimeter.



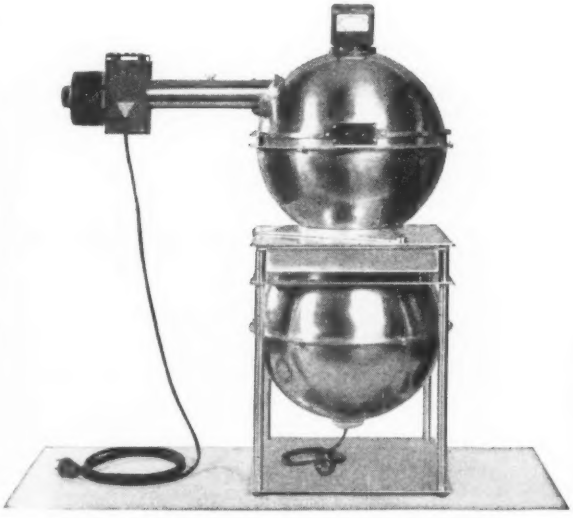
"Planned Lighting" Plus

G-E Lamp Department has developed a full line of meters to help you demonstrate and merchandise better lighting

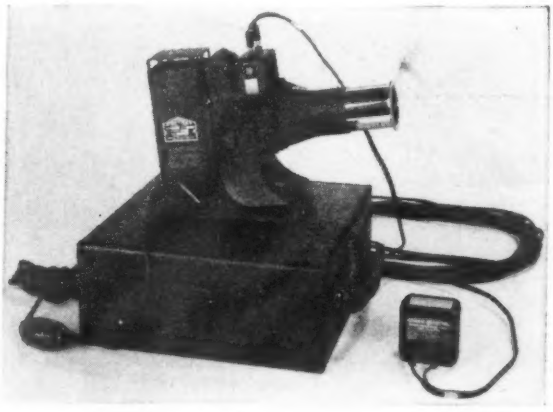
WE'RE in the *lamp* business. So our basic responsibility to consumers continues to be the production of an ever-increasing line of quality light sources for every purpose. But our job doesn't stop there. In many other ways the G-E Lamp organization works constantly to stimulate modern lighting practice in homes, stores, offices, factories and public institutions.

For example, General Electric Lamp engineers know the vital importance of convenient, accurate light measurement as a part of Planned Lighting. So they have developed a full line of meters for the complete analysis of illumination—both quantitative and qualitative. Typical G-E instruments are illustrated and briefly described on these pages. These Planned Lighting tools are available to you—at manufacturer's cost—for the use of your lighting specialists.

FOR ADDITIONAL INFORMATION *on G-E light meters for Planned Lighting, their application and prices, contact your nearby General Electric Lamp Office. Or write General Electric Lamp Department, Dept. 166- ES-5, Nela Park, Cleveland 12, Ohio.*



BAUMGARTNER REFLECTOMETER—A portable, moderately priced instrument for evaluating the reflection and transmission factors of translucent plastics, porcelain enamel, paint, acoustical and other materials of importance to the lighting profession. Operates independent of visual observation. May be used also to measure the reflection factor of walls and ceilings.



PROJECTION LIGHT METER—A handy portable instrument for projecting the standard General Electric light meter face on a screen. Facilitates demonstration to large groups. Projection meter may be used for taking readings up to 100 footcandles.

G-E LAMPS

GENERAL ELECTRIC

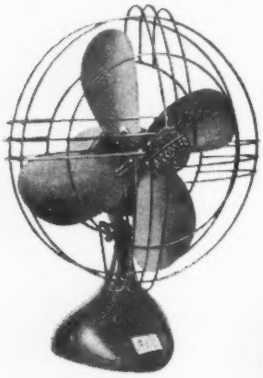
PRESENTING TOMORROW'S FANS TODAY

ZEPHYR

AIRKOOLER

GEMS OF THE SMALL FAN FIELD

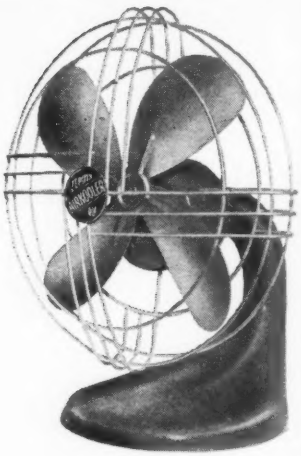
Underwriter Approved



MODEL 9Z

The sensation of 1947 in the small fan field is the Zephyr Airkooler. Beautifully designed in 9" and 10" models in a wide variety of colors. Ideal for home, office, shop . . . Perfectly balanced — will not creep Quiet as a spring breeze . . . Causes no radio interference . . . Chrysler Oilite bearings require no oiling. All models underwriter approved . . . Guaranteed one year. Large repeat orders show strong consumer demand. Distributors throughout the south. Prompt delivery. Write for full details and folders today.

Underwriter Approved



MODEL 10EZ

Zephyr Airkooler

WRIGHT INDUSTRIES

LISBON, Incorporated OHIO

ADVANCE Ballasts give assurance of continuous performance, for only one out of every ten thousand ADVANCE Ballasts made has ever been returned.

- IMMEDIATE DELIVERY
- EXPANDED PRODUCTION

Greatly increased production facilities enable us to meet the constantly growing demand for ADVANCE Ballasts . . . now made to meet all Fluorescent lighting needs.

60 cycle	50 cycle
118, 150, 208, 220 and 236 Volt	
Single and double 15, 20, 30 & 40 Watt	
High Power Factor & Low Power Factor.	

New convenient size 32 Watt CIRCLINE BALLAST. A streamlined Ballast at a streamlined price.

WRITE FOR INFORMATION.

ADVANCE TRANSFORMER CO.

1112 W. CATALPA AVE. • CABLE ADDRESS: ADTRANS • CHICAGO 40, ILL., U. S. A.

NOW... ALCOA ALUMINUM FOR BUILDING WIRE!

Here's good news for architects, builders, and electrical contractors!

Aluminum Building Wire in sizes No. 12 A.W.G. to 1,000,000 C.M. and larger are now in production. They have the approval of Underwriters' Laboratories, Inc., and meet the requirements of the 1947 National Electrical Code.

Since 1898, Alcoa Aluminum has been in service in high-voltage conductors on this nation's transmission systems. More than 1½ million miles of aluminum electrical cable are in use today in all parts of the country.

On the job, aluminum conductors have proved themselves efficient and dependable for use wherever electricity is conducted.

Aluminum Building Wire, made from Alcoa Aluminum, is now available from manufacturers of insulated wire for use in homes, factories, stores, etc.

See your manufacturer, distributor, or jobber for further information on Aluminum Building Wire. ALUMINUM COMPANY OF AMERICA, 2164 Gulf Bldg., Pittsburgh 19, Pa. Sales offices in leading cities.

MORE people want MORE aluminum for MORE uses than ever

ALCOA FIRST IN ALUMINUM

IN EVERY COMMERCIAL FORM

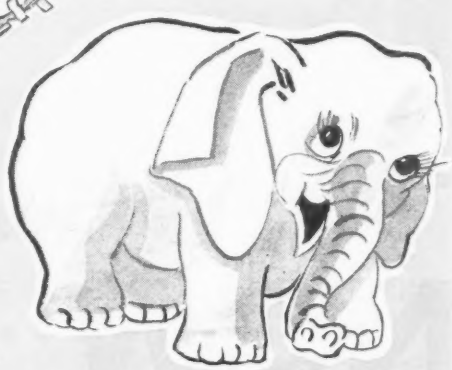
WE KNOW THERE WERE DAYS

When you got hot under the collar because deliveries didn't come through and we had to tell you merchandise wasn't available and when...

You felt we were taking you to ride on a merry-go-round, when...

ATLANTA ELECTRICAL AGENTS CLUB
10
10 YEAR

Lot of the things shipped you seemed like little white elephants...



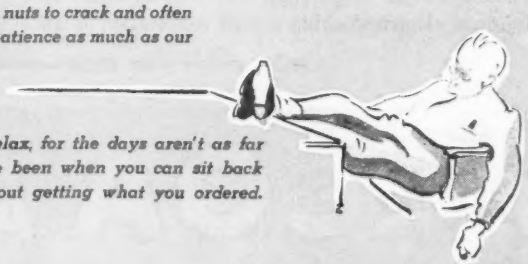
NOW SERIOUSLY...

Remember how our bloodhound instincts for tracking down business helped us track down solutions to many of your problems... don't forget

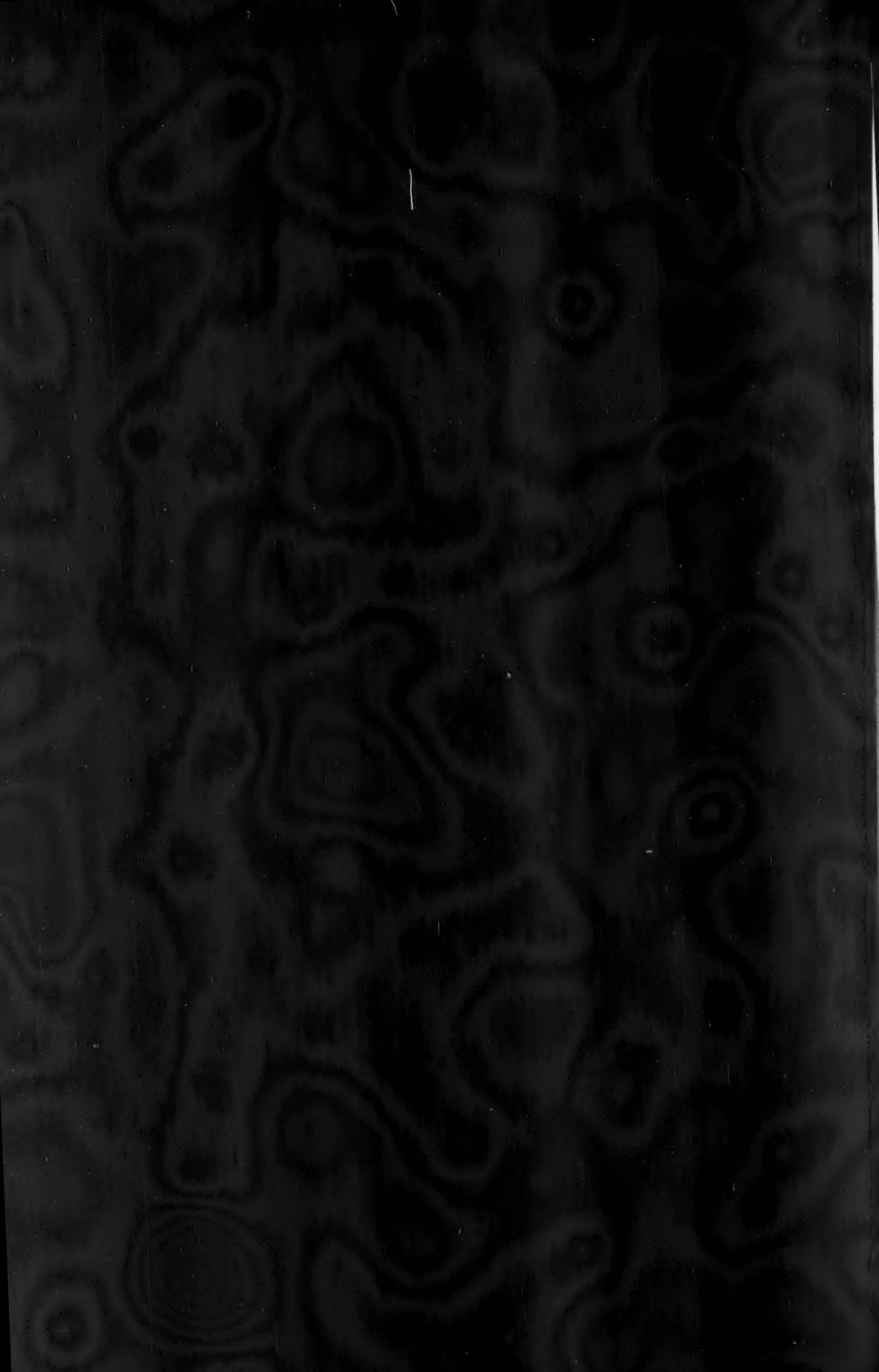
Members

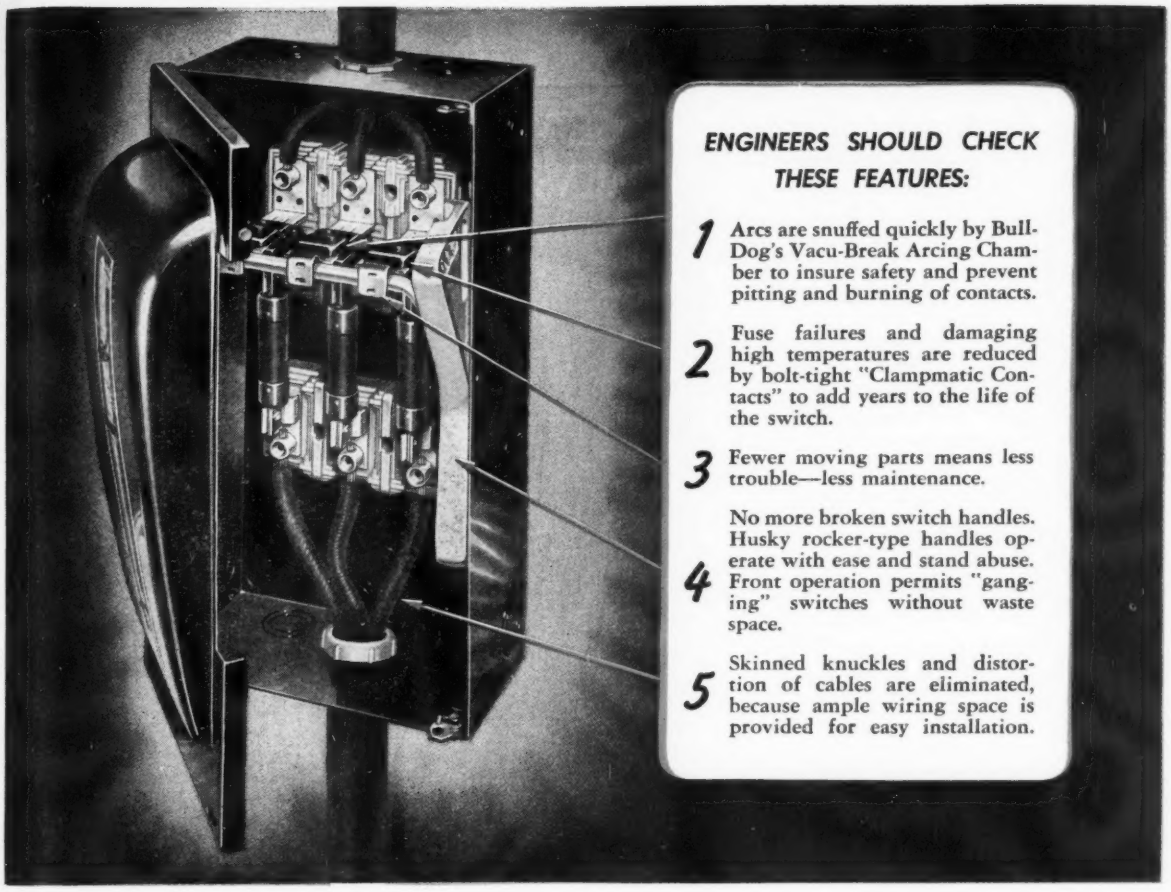
W. H. BERRY COMPANY, 88 Pryor St., S.W.
EDGAR E. DAWES & CO., Rhodes Building
HENRY W. CLOWER, 377 Whitehall St., S.W.
HOPPER & McCOY, 306 Marietta St., N.W.
L. MORRIS LANDERS CO., Walton Building
ERNEST T. LOYD, 69 Mills Street, N. W.
C. C. SCHOEN, 289 Simpson Street, N. W.

They were tough nuts to crack and often they tried your patience as much as our abilities... but



Fellows you can relax, for the days aren't as far away as they have been when you can sit back and not worry about getting what you ordered.





ENGINEERS SHOULD CHECK THESE FEATURES:

1. Arcs are snuffed quickly by BullDog's Vacu-Break Arcing Chamber to insure safety and prevent pitting and burning of contacts.
2. Fuse failures and damaging high temperatures are reduced by bolt-tight "Clampmatic Contacts" to add years to the life of the switch.
3. Fewer moving parts means less trouble—less maintenance.
4. No more broken switch handles. Husky rocker-type handles operate with ease and stand abuse. Front operation permits "ganging" switches without waste space.
5. Skinned knuckles and distortion of cables are eliminated, because ample wiring space is provided for easy installation.

Better switch to a Better Switch!

ONCE a safety switch is installed, most everybody takes it for granted, at least until it starts to give trouble.

But you never have to give BullDog Vacu-Break Safety Switches more than a passing glance. These modern switches are designed and built to give long, trouble-free service under heavy use with the *absolute minimum of maintenance.*

No costly shutdowns on your production line . . . no delays for expensive switch repairs. Those are the reasons why thousands of plant executives and their engineers have agreed on BullDog Vacu-Break Switches.

You'll do well to follow their lead by *switching to a better switch.* There's a BullDog Field Engineer close by to show you BullDog installations near your own plant and give you full technical details. Or you can write BullDog direct for descriptive folders. Do it today!

• • •

BullDog manufactures Vacu-Break Safety Switches—SafToFuse Panelboards—Superba and Rocker Type Lighting Panels—Switchboards—Circuit Master Breakers—"Lo-X" Feeder BUStribution DUCT—"Plug-in" Type BUStribution DUCT—Universal Trol-E-Duct for flexible lighting—Industrial Trol-E-Duct for portable tools, cranes, hoists.

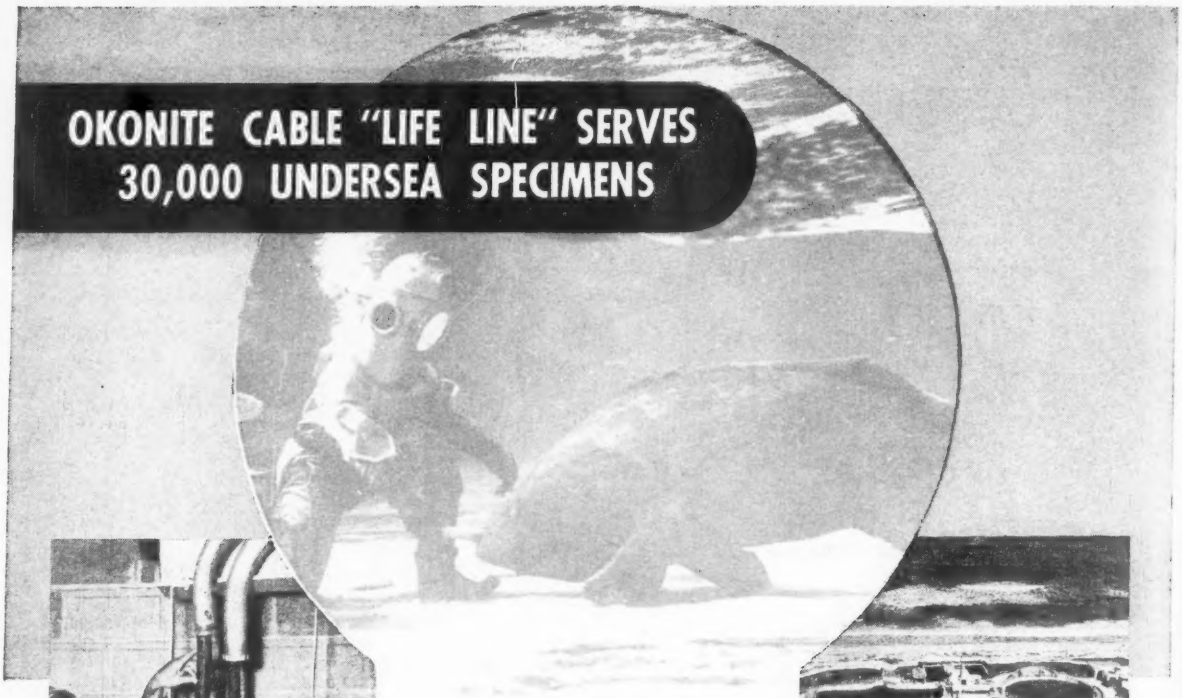
ADEQUATE WIRING SERVES AND SAVES

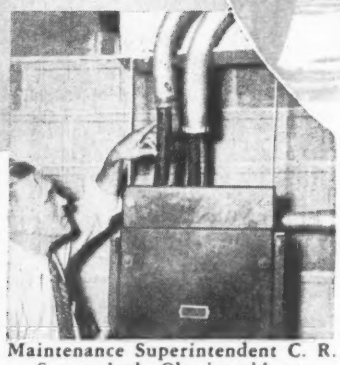
BULLDOG

ELECTRIC PRODUCTS COMPANY

DETROIT 32, MICHIGAN. FIELD OFFICES IN ALL PRINCIPAL CITIES. IN CANADA: BULLDOG ELECTRIC PRODUCTS OF CANADA, LTD., TORONTO

OKONITE CABLE "LIFE LINE" SERVES 30,000 UNDERSEA SPECIMENS





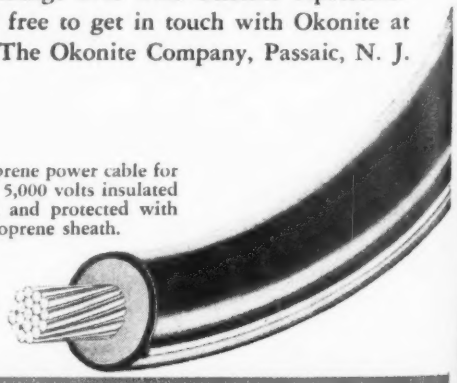
Maintenance Superintendent C. R. Swartz checks Okonite cable at Marine Studios.

Air view of Marine Studios reopened after wartime closing.

In the widely-known Marine Studios at Marineland, Fla., ocean floor conditions are duplicated in two giant tanks. More than 30,000 marine specimens are presented in their natural setting and are seen by steady streams of visitors to this $1,000,000 research center and popular showplace.

Life line to these large and small undersea specimens in this permanent exhibit is power cable built by Okonite and insulated with Okolite-Okoprene on individual conductors and covered over-all with a substantial Okoprene sheath. Shown in the photograph is the main switch panel for general power distribution (a 2,300 volt circuit.) Power is taken to a transformer bank where it is stepped down to 220-110 volt circuits furnishing electricity for motors ranging from ¼ to 30 h.p. These motors pump more than 7,000,000 gallons of sea water into the tanks daily.

"Unusual" cable installations have a way of turning out to be Okonite. Hundreds and hundreds of individual problems of electrical distribution and transmission have been worked out by electrical engineers in industry and utilities when they talk things over with Okonite representatives. Feel free to get in touch with Okonite at any time. The Okonite Company, Passaic, N. J.



Okolite-Okoprene power cable for service up to 5,000 volts insulated with Okolite and protected with a bonded Okoprene sheath.

OKONITE insulated wires and cables

4986

1897 ★ 1947

A Man and an Organization

In 1897, just eighteen years after the birth of the incandescent lamp, Augustus D. Curtis, and his associates, evolved the idea of controlling and directing the light rays of that lamp by means of scientifically designed silver mirror reflectors.

This Curtis "first" was the beginning of a long series of firsts by the company founded by Mr. Curtis.

So thoroughly was the spirit of achievement implanted in this company that now, after a half century of growth, it is gratifying to realize that other firsts marked every milestone.

50

YEARS OF PROGRESS

In the Lighting Industry

1897-1907

1 First to develop a one-piece silvered glass reflector for accurate control of light. (The "X-Ray" Reflector—1897)

2 First to make silvered glass reflector clusters to adapt old gas and electric fixtures for controlled direct lighting.

3 First to incorporate spiral and vertical corrugations in silvered glass reflectors for light diffusing.

4 First to advocate scientific principles in lighting show window displays.

5 First to install a "modern" show window lighting job. (The Washington Shirt Company, Chicago, in 1897)

6 First to use individual silver mirror reflectors for show window lighting.

7 First to export silvered glass reflectors for controlled lighting.

1907-1917

8 First to introduce indirect lighting (Original demonstration made in 1908 before the I. E. S.).

9 First to develop "Adapters" to convert gas and electric stem fixtures to indirect luminaires.

10 First to use portable lamps to provide indirect lighting. (Curtis Adapters)

11 First to emphasize "Eye-Comfort" in lighting applications.

12 First to patent and make indirect luminaires incorporating the luminous bowl principle.

13 First to develop and market a commercial floodlighting projector.

14 First to prepare and distribute "Architectural Plates" on lighting for architects and designers. (1914)

15 First to design church lanterns incorporating concealed reflectors for controlled direct and indirect lighting.

16 First to develop and apply efficient and controlled cove lighting with individual silver mirror indirect reflectors.

17 First to apply silvered reflectors to pedestal for indirect lighting in foyers, lobbies, public dining rooms, etc.

18 First to develop a specially designed silver mirror reflector for indirect wall brackets.

19 First to use individual silvered glass reflectors for stage lighting.

20 First to develop a show case lighting unit with individual silvered glass reflectors (Scoopette)

1917-1927

21 First to advocate "lighting from concealed sources" as a basic fundamental in lighting practice.

22 First to develop and manufacture a comprehensive line of color equipment for show window reflectors. (Color-Ray)

23 First to manufacture a hospital bed lamp for direct and indirect lighting. (Dua-Light)

24 First lighting fixture company to conduct student courses for training illuminating engineers. (Curtis Lighting Training Group)

25 First to develop the show window floodlight. (Flood-Ray)

26 First to develop a hospital night light with control mechanism for dimming. (Nite Light)

27 First to introduce "color lens" cove lighting for theaters, ballrooms, etc. (Culrlenz)

28 First to incorporate colored indirect lighting in large crystal chandeliers.

29 First to use indirect adapters for candle fixtures.

30 First to develop a "control ring" for show window floodlights.

31 First to use high intensity show window lighting to minimize daylight reflections. (Super lighting)

1927-1937

32 First to design and produce Alzak Aluminum lighting equipment.

33 First to provide equipment to concentrate light on the "Attraction-Zone" in window display.

34 First to apply an automatic control "organ" for spectacular color changes. (Lumitone)

35 First lighting equipment company to be licensed under "Alzak" patents.

36 First to patent and manufacture snap-in cover type raceway and a comprehensive line of fittings. (CurtiStrip)

37 First to completely illuminate the exterior surfaces of opaque fixtures by reflected light. ("Edge-Ray")

38 First to manufacture a special library table lighting unit under the Higbee patents.

39 First to make silvered glass reflectors with a patented high temperature heat resisting backing. (The famous Golden Armor)

40 First to make a standard reflector unit for lumiline lamps in continuous lines. (Light-Strip)

41 First with a packaged plug-in show window lighting unit. ("Thritty-Three")

1937-1947

42 First to introduce continuous lines of light for fluorescent lamps. (Fluorescent CurtiStrip in 1938)

43 First with the patented combination reflector lamp shield principle for horizontal shielding of fluorescent lamps. (SkyLux)

44 First commercial lighting fixture company to conduct and organize a training course for the electrical trade on fluorescent lighting.

45 First to develop an "ejector" type socket for fluorescent lamps.

46 First with an "Engineered" four-lamp fluorescent fixture incorporating glass diffusing panels and louvered direct component lighting. (No. 1240 "Firefly")

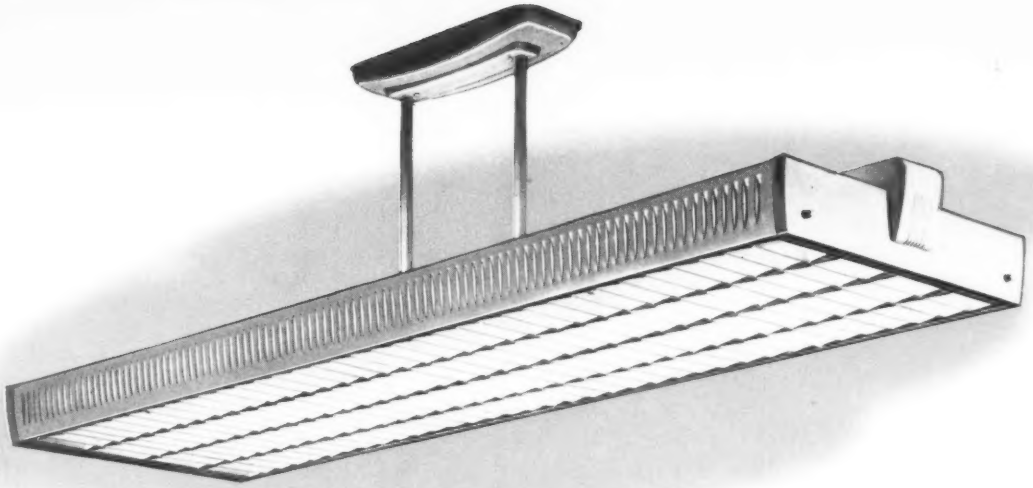
47 First to develop an asymmetric type reflector for the fluorescent lamp.

48 First to patent and manufacture a low brightness glass bowl fixture for scientific downlighting in stores.

49 First to develop and use a stable white synthetic material for reflecting surfaces. (Fluracite)

50 First to design and manufacture a louvered "low brightness" fluorescent luminaire of Alzak aluminum. ("Forty-Sixty")

50 *firsts* FOR FIFTY YEARS



The Anniversary Luminaire

CATALOG No. 51

The new "Anniversary" luminaire is keyed to the spirit of the *next* fifty years. A truly modern design for four 40-watt fluorescent lamps, it incorporates many new features of construction which contribute to its trim elegance.

Catalog No. 51 is a marvel of functional design. The attractive "dart" pattern is integral with the simplified louver construction (which has 30° shielding lengthwise and crosswise). The side panels are ingeniously illuminated by reflected light from the decorative side louvers.

For use as an individual unit or in continuous runs, Catalog No. 51 is completely open at the top and the wide upward distribution permits its application to a great variety of lighting jobs. Its fine balance between simplicity and functional decoration blends well with any type interior.

Your customers will like this unit. Write us today for specifications.

...AND NOW THE

Curtis "51"

FACILITIES TO PRODUCE

ORGANIZATION TO SERVE

★ ★ ★ ★ ★

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BALTIMORE 2, MARYLAND
T. H. Bailey, Jr. — 614 Garrett Building

BOSTON, MASS.
L. S. Cooke — 436 Webster Street
Needham Heights 94, Mass.

CHICAGO SALES OFFICE
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CINCINNATI 8, OHIO
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J. W. Shively — Swetland Bldg. — Room 402

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Fred H. Simmer — 103 Thomas Bldg.

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H. J. Damm — 20 South Capitol

KANSAS CITY 3, KANSAS
H. B. Ewert — 5228 Canterbury Road

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H. Q. Beven, 759 N. Milwaukee St., Rm. 204

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Ray A. Siedle — 662 Monroe Ave.

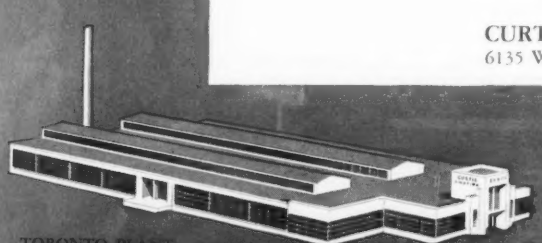
ST. LOUIS 1, MISSOURI
G. C. Law — 313 N. 9th Street

SAN FRANCISCO 2, CALIFORNIA
J. D. Erikson — 100 Hermann Street

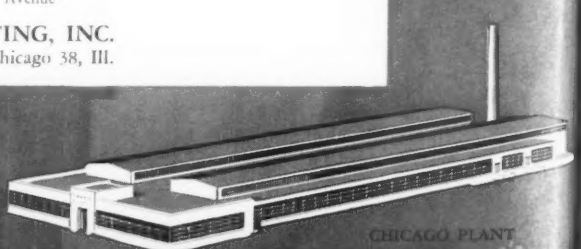
SEATTLE 1, WASHINGTON
W. K. Turner — Terminal Sales Building

CURTIS LIGHTING OF CANADA, LTD.
Leaside, Toronto 12, Ontario, Canada
195 Wicksteed Avenue

CURTIS LIGHTING, INC.
6135 W. 65th St., Chicago 38, Ill.



TORONTO PLANT



CHICAGO PLANT

Curtis Lighting

NEW YORK ★ CHICAGO ★ TORONTO

SALES & SERVICE REPRESENTATIVES IN ALL PRINCIPAL CITIES

TO FIT THE JOB!

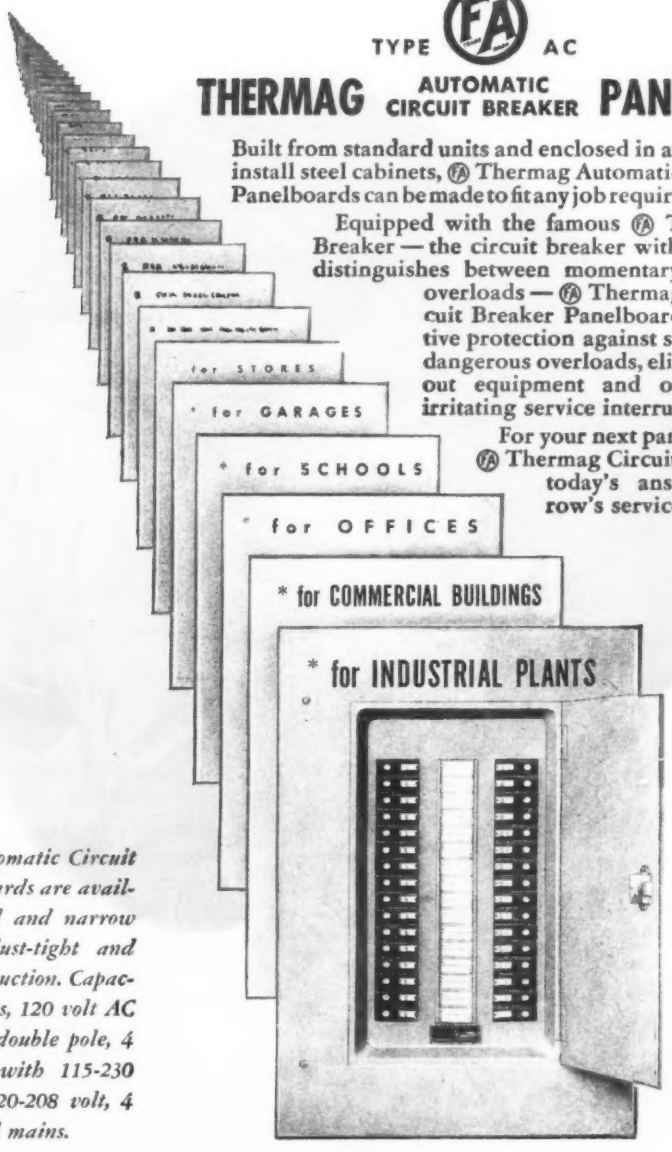
TYPE FA AC

THERMAG AUTOMATIC CIRCUIT BREAKER PANELBOARDS

Built from standard units and enclosed in attractive, easy-to-install steel cabinets, FA Thermag Automatic Circuit Breaker Panelboards can be made to fit any job requiring panelboards.

Equipped with the famous FA Thermag Circuit Breaker — the circuit breaker with a brain, which distinguishes between momentary and sustained overloads — FA Thermag Automatic Circuit Breaker Panelboards provide positive protection against short circuits and dangerous overloads, eliminating burned out equipment and other costly and irritating service interruptions.

For your next panelboard, specify FA Thermag Circuit Breaker type — today's answer to tomorrow's service problem.



FA Thermag Automatic Circuit Breaker Panelboards are available in standard and narrow column types, dust-tight and vapor-proof construction. Capacities 15 to 50 amps, 120 volt AC only — single or double pole, 4 to 42 branches with 115-230 volt, 3 wire or 120-208 volt, 4 wire solid neutral mains.

MAKERS OF
BUSDUCT
PANELBOARDS
SWITCHBOARDS

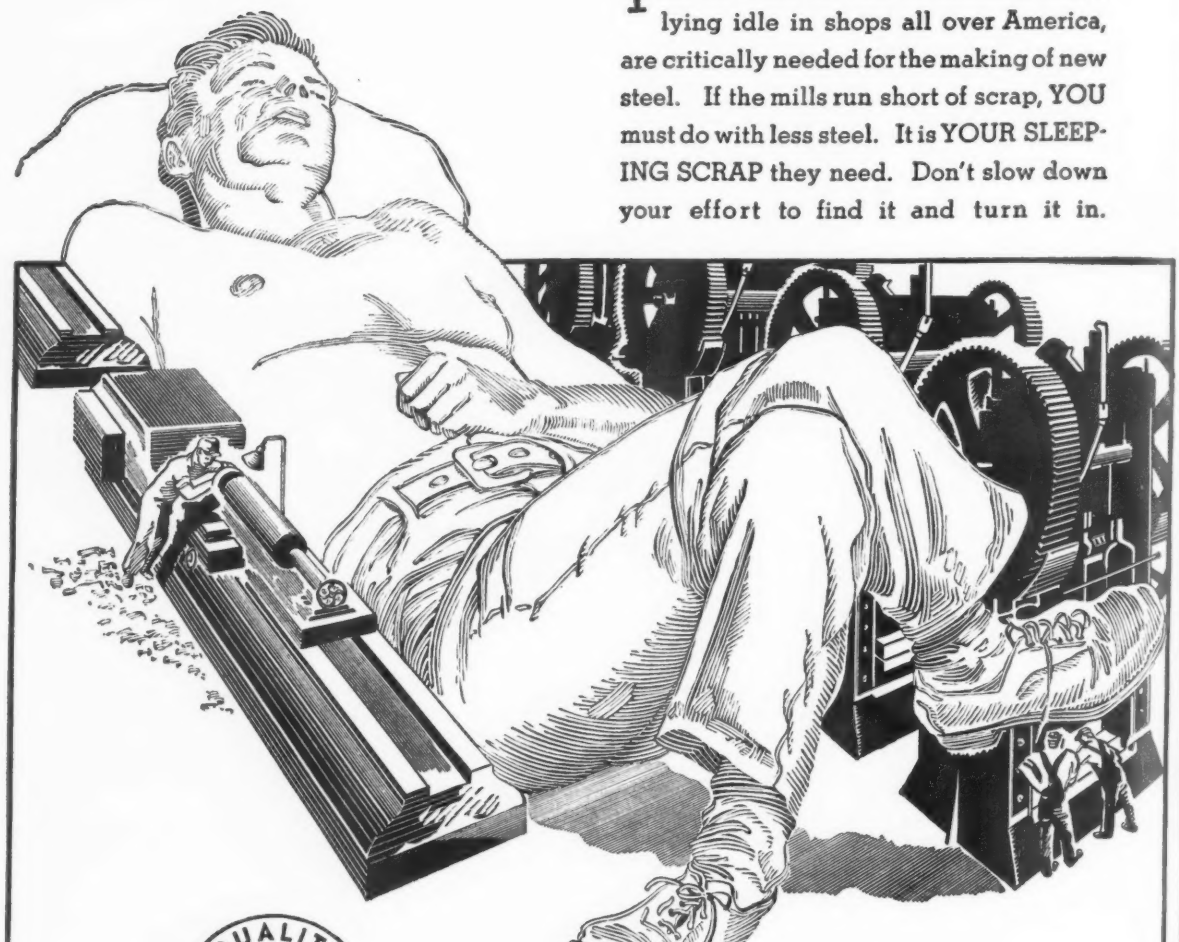
Frank Adam
ELECTRIC COMPANY
ST. LOUIS, MISSOURI

SERVICE EQUIPMENT
SAFETY SWITCHES
LOAD CENTERS
ELECTRIC QUIETWAYS

WAKE SLEEPING SCRAP!

Put this giant to work at once, making STEEL

THE millions of tons of dormant scrap, lying idle in shops all over America, are critically needed for the making of new steel. If the mills run short of scrap, YOU must do with less steel. It is YOUR SLEEPING SCRAP they need. Don't slow down your effort to find it and turn it in.



QUALITY YOUNGSTOWN SERVICE

YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

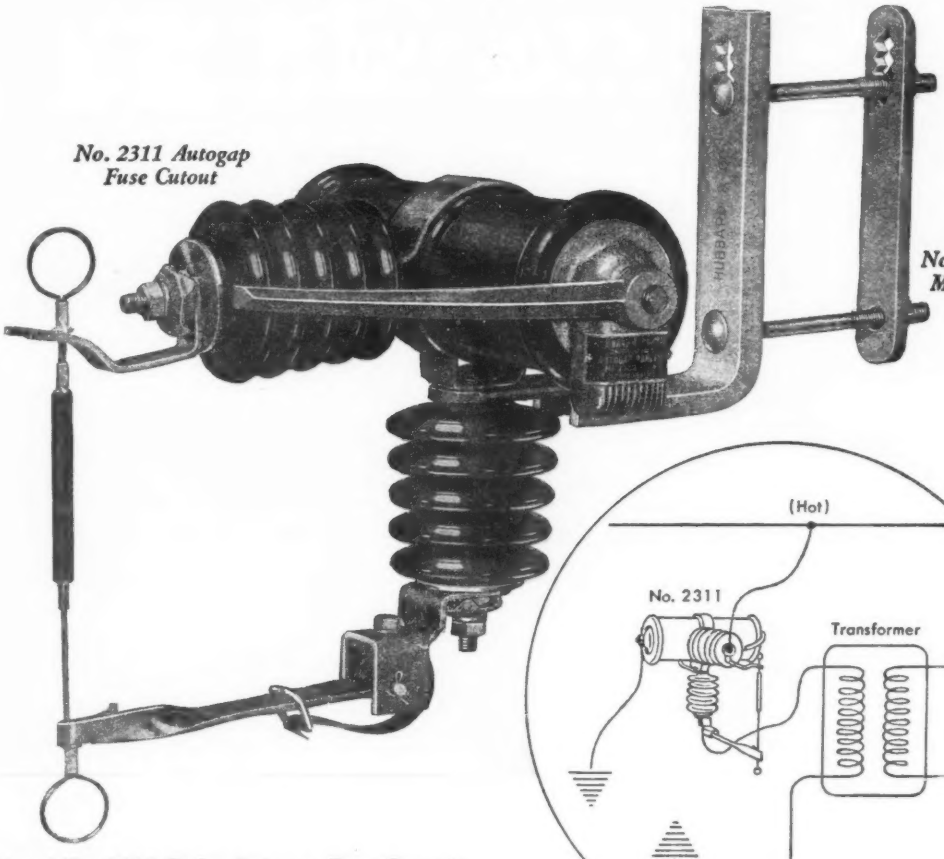
Pipe and Tubular Products-Sheets-Plates-Conduit-Bars-Rods-Wire-Electrolytic Tin Plate-Coke Tin Plate-Cold Drawn Carbon Steel Rounds - Tie Plates and Spikes.

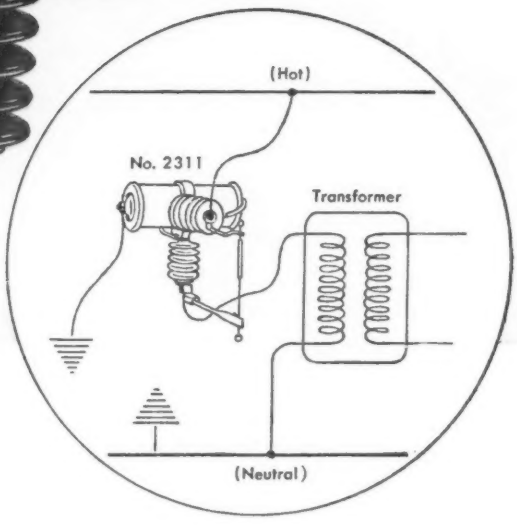
HUBBARD AUTOGAP FUSE

A combination of the No. 2302 Hubbard Autogap Arrester with a 7½ K.V. dropout Fuse

No. 2311 Autogap Fuse Cutout

No. 2323 Crossarm Mounting Bracket (included)





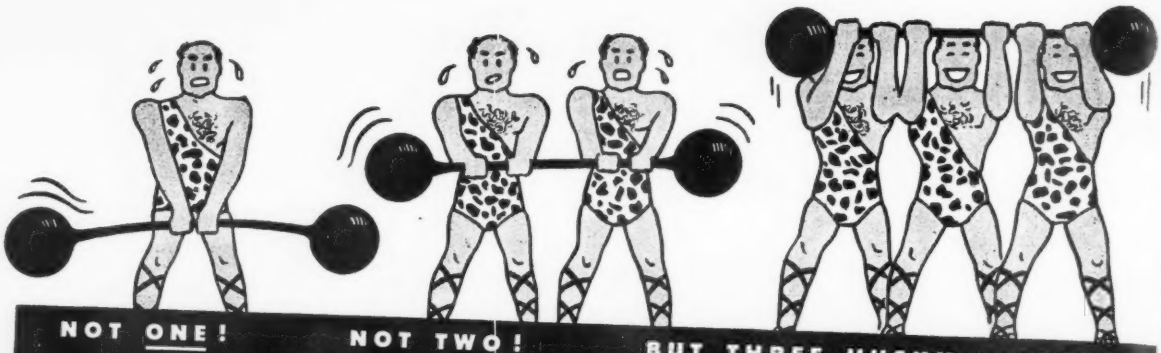
Hubbard No. 2311 Style, Autogap Fuse Cutouts are recommended for use when phase to ground voltage does not exceed 7500 volts. Fuse rating is 50 Amperes and interrupting capacity is 1200 Amperes. Bracket No. 2323 is furnished for cross arm mounting and No. 2325 for pole mounting. Type of Bracket must be specified when ordering as one type only is included. Special brackets can be furnished. Fuse links are not included.

This new Hubbard open link type of cut-out is built around the sturdy and efficient Autogap No. 2302 with the fuse mechanism added. It has the same highly rated moisture proof, long-life Autogap qualifications that are so widely accepted by engineers throughout the power field. It is approved by R.E.A. and will be displayed at Hubbard Booth No. 8 at the National Rural Electric Cooperative Association Convention at Spokane, April 22-25. Ask to see it and don't miss the miniature Hubbard Autogap in action.

HUBBARD and COMPANY

Pittsburgh *Chicago*

Oakland, California



NOT ONE! NOT TWO! BUT THREE HUSKY HELPERS

To Boost Silent Breeze Profits for You!

"BIG SPACE" NATIONAL ADVERTISING

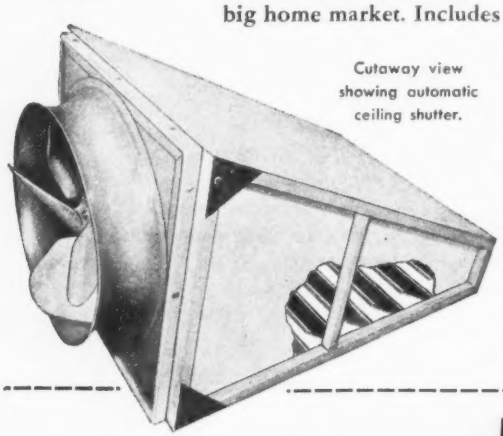
Reaching regularly into more than 6,725,000 homes with compelling half and quarter-pages in *The Saturday Evening Post* and *Better Homes and Gardens.* Building ever-greater acceptance among 54,882 dealers, distributors and others in the trade with full, half and three-quarter pages in leading trade publications.

POWERFUL PROFIT PROMOTION FOR DEALERS

Helping you take advantage of the richest ventilating fan market on record with a big, new newspaper campaign for local use . . . point-of-sale displays . . . folders, leaflets, envelope stuffers . . . scripts for local radio commercials . . . and many others. Plus *free,* 48-page Selection and Installation Manual for the guidance of *Silent Breeze* dealers in making every home, commercial or industrial installation a success.

A PRODUCT COMPLETELY "PACKAGED" FOR EASY INSTALLATION

A *Silent Breeze* "first"—a "natural" for the big home market. Includes *all* the fan sizes and automatic accessories you need for any residential installation:



Cutaway view showing automatic ceiling shutter.

SILENT BREEZE FAN—Modernly designed and ruggedly built. Whisper-quiet and economical in operation.

SUCTION CHAMBER—Provides a leakproof, sound-absorbing enclosure between fan and shutter or grille. Prefabricated in four panels for easy assembly.

COMFORTROL—Precision time switch for completely automatic fan operation.

AUTOMATIC CEILING SHUTTER—Opens when fan comes on, closes when it is shut off. Latest flush-type design.
(Automatic outlet shutter available for sidewall installation when suction chamber is not used.)

Put These Three Big Profit-Makers to Work for You Now!

Write

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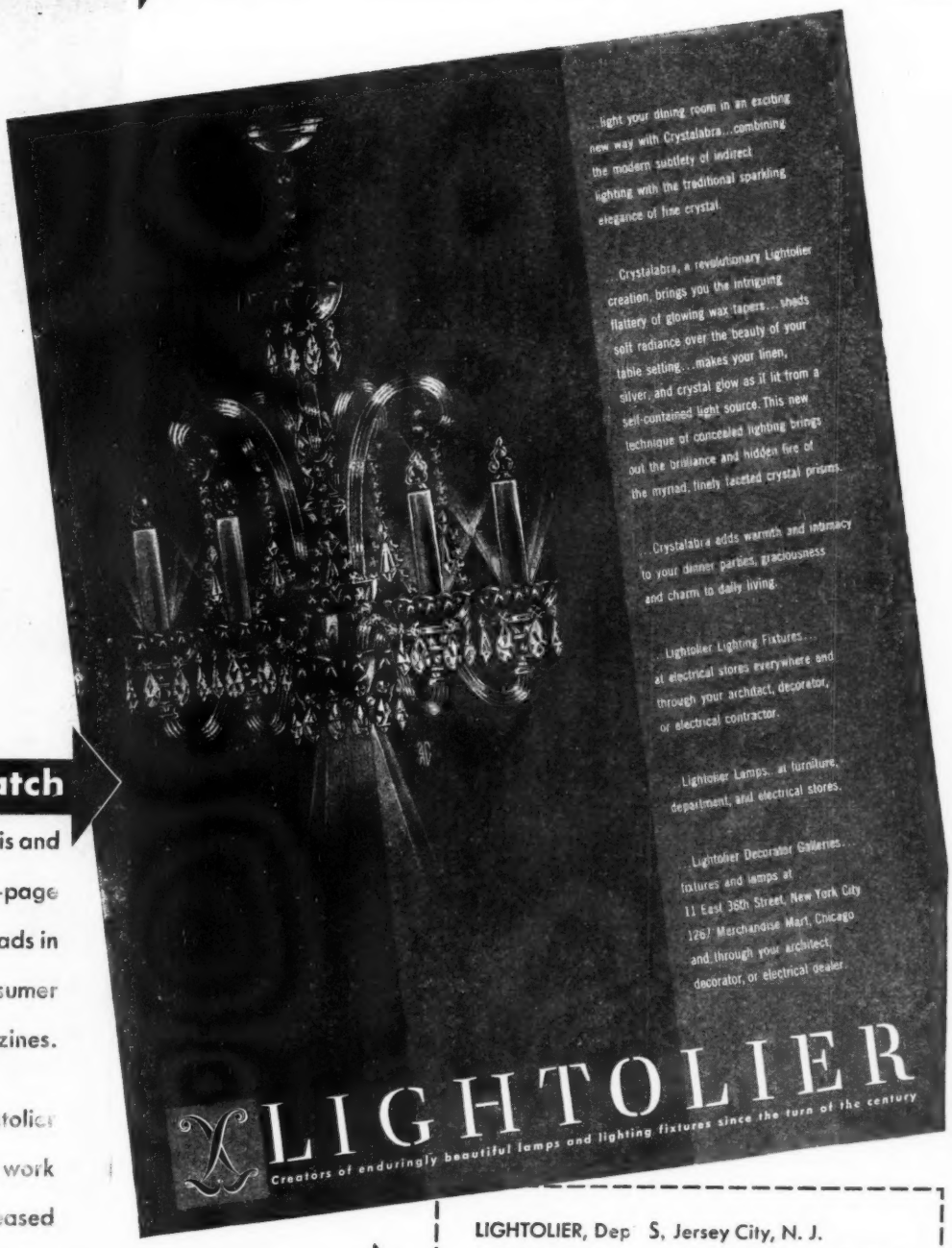
1545 VAN BUREN ST., INDIANAPOLIS 7, IND.

Silent Breeze
VENTILATING FANS
VENTILATION PLUS COOLING WITH AIR IN MOTION

LIGHTOLIER'S **record-smashing consumer advertising is the beginning of a new profit plan for you**


...light your dining room in an exciting new way with Crystalabra...combining the modern subtlety of indirect lighting with the traditional sparkling elegance of fine crystal.
...Crystalabra, a revolutionary Lightolier creation, brings you the intriguing flattery of glowing wax tapers... sheds soft radiance over the beauty of your table setting....makes your linen, silver, and crystal glow as if lit from a self-contained light source. This new technique of concealed lighting brings out the brilliance and hidden fire of the myriad, finely faceted crystal prisms.
...Crystalabra adds warmth and intimacy to your dinner parties, graciousness and charm to daily living.
...Lightolier Lighting Fixtures... at electrical stores everywhere and through your architect, decorator, or electrical contractor.
...Lightolier Lamps... at furniture, department, and electrical stores.
...Lightolier Decorator Galleries... fixtures and lamps at 11 East 36th Street, New York City 1267 Merchandise Mart, Chicago and through your architect, decorator, or electrical dealer.
LIGHTOLIER
Creators of enduringly beautiful lamps and lighting fixtures since the turn of the century

watch for this and other full-page Lightolier ads in national consumer magazines.

Put the Lightolier Profit Plan to work for increased sales.

mail this coupon today

LIGHTOLIER, Dep S, Jersey City, N. J.
Tell me how I can put the Lightolier Profit Plan to work for *me*.

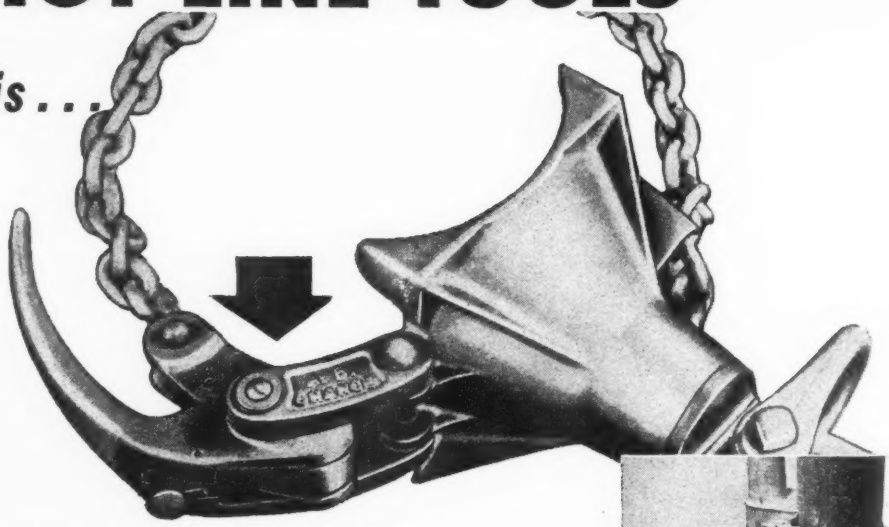
Name.....

Address.....

City.....Zone.....State.....

New CHANCE *Aluminum Fitted* HOT LINE TOOLS

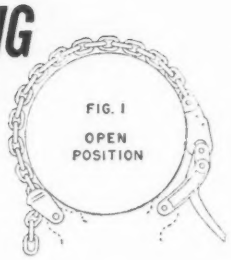
have this . . .

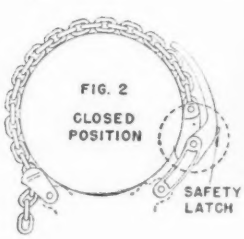


EASY to APPLY, SAFE LOCKING CHAIN TIGHTENER

Now all Chance Hot Line Tools, which are designed for attachment to poles, are equipped with a new light weight chain tightener that can be quickly secured to the pole by a lever operation and is latched with a specially designed safety catch. Except for the small safety latch trigger, connecting bolts, and the chain, the metal parts are made of aluminum alloy and then heat treated to give them added strength. These aluminum parts have been tested and proved to be considerably stronger than the high-strength steel loading chain which has a breaking load in excess of 6000 pounds. The use of aluminum reduces the weight linemen are required to handle on the pole. The lever operation makes application of the chain tightener much easier and faster than the old screw take-up method.

The illustrations at right show the steps of application. First, the chain is wrapped around the pole and engaged in the chain socket while the tightening lever is in open position. (Fig. 1) To tighten, the lever is moved to closed position (Fig. 2) and the safety catch automatically latches. If chain is too loose, the tightener may be released and the chain taken up a link in the chain socket, or a half link adjustment can be made in the take up. (Fig. 3) It is necessary to depress the safety latch and at the same time pull the lever as suggested in the lower photograph in order to release the tightener. Thus, there is no danger of a lineman accidentally loosening the tightener.





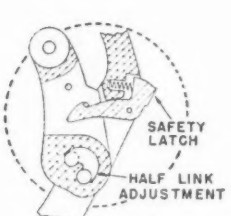
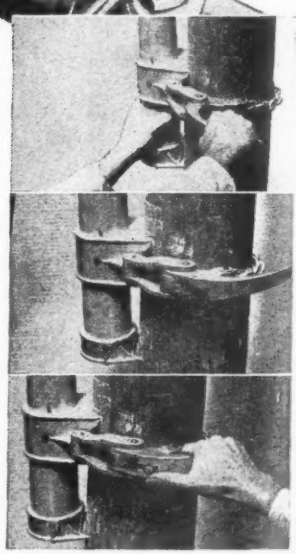


FIG. 3



- Speed in attaching equipment to poles.
- Light weight.
- Over toggle latching that holds handle in closed position.
- Safety catch to prevent accidental unlatching.
- Each unit checked for proper latching before shipment.
- Metal Fittings are X-ray inspected.

C479A

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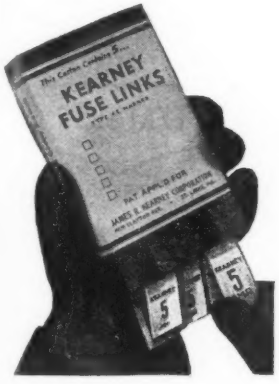
CENTRALIA, MISSOURI · SAN FRANCISCO, CALIFORNIA
ABC INDUSTRIES

Kearney Fuse Links

Lower Fuse Costs
Provide Close Coordination

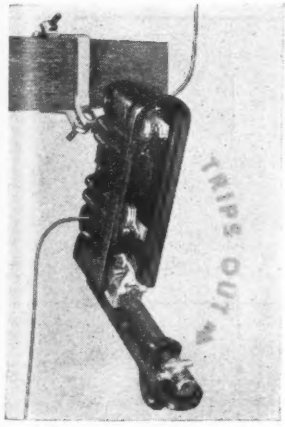


KEARNEY patented Fuse-Paks keep fuse links in perfect condition. Each link separately wrapped, cannot become tangled or bent. Convenient carton protects against damage from dropping or rough handling. Eliminates loss due to breakage—and bulk packaging often causes losses as high as 30%.

Save Time in Stock Room. Fuse-Paks are easy to store—easy to dispense. Ratings are clearly marked—simplifies counting inventory.

Convenient for Troubleman. Handy package hooks onto belt or slips into pocket. Fuse links are held in the Fuse-Pak—they cannot fall out, they must be *pulled* out. No loss of time due to installing damaged link.

Close Coordination. Careful selection of materials, precision manufacturing, expert assembling and rigid inspection assures maximum uniformity. You are assured of close coordination when you use Kearney Fuse Links. Specify Kearney for all your fusing needs. They are available for all modern types of cutouts.



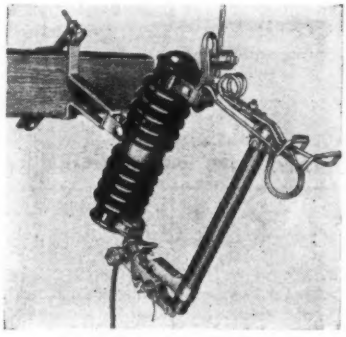
7500 Volt, 100 ampere Kearney TRIP O MATIC Catalog No. 5770—20

Kearney TRIP O MATIC

Reduce losses due to unnecessary service interruptions. Design features include ease of fusing, and visual indication when an outage occurs. Convertible to disconnect switch by using door with solid blade. Available in 50 and 100 ampere sizes, 5 and 7.5 KV.

Kearney TRIP-OUT

Simple trip-action mechanism assures positive interruption on overloads as well as short circuits. Point pressure contacts assure good conductivity. Re-fusing is quick and easy. Available in ratings 5 to 69 KV, 100 and 200 amperes.



7500 Volt, 100 ampere Kearney Trip-Out, Series B, Catalog No. 6739

For Better Results

Specify Kearney Products

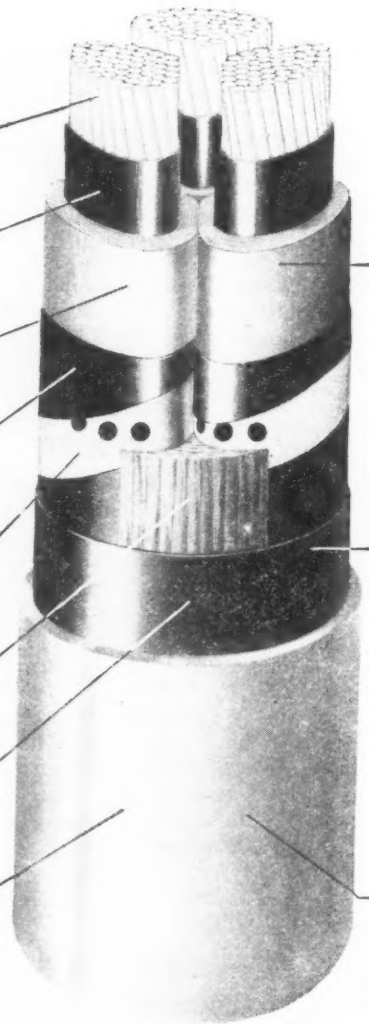
88

JAMES R. KEARNEY CORPORATION

4224-42 Clayton Ave., Saint Louis 10, Mo. • Canadian Plant, Leaside, Ontario

Anaconda TYPE CB* CABLE

CONSTRUCTION



CONDUCTOR

CB PAPER TAPE OVER CONDUCTOR

PAPER INSULATION

CB PAPER TAPE OVER INSULATION

COPPER SHIELDING TAPE
INTERCALATED WITH **CB** PAPER TAPE

CB PAPER (OR PLAIN PAPER) FILLERS

CB PAPER BINDER TAPES

F-3 ALLOY SHEATH

*__CB__ = CARBON BLACK
Trade-Mark Registered

FEATURES

Also available in single-conductor, multi-conductor belted and multi-conductor shielded cable with metal binder tape.

ANACONDA
from mine to consumer

ANACONDA WIRE AND CABLE COMPANY

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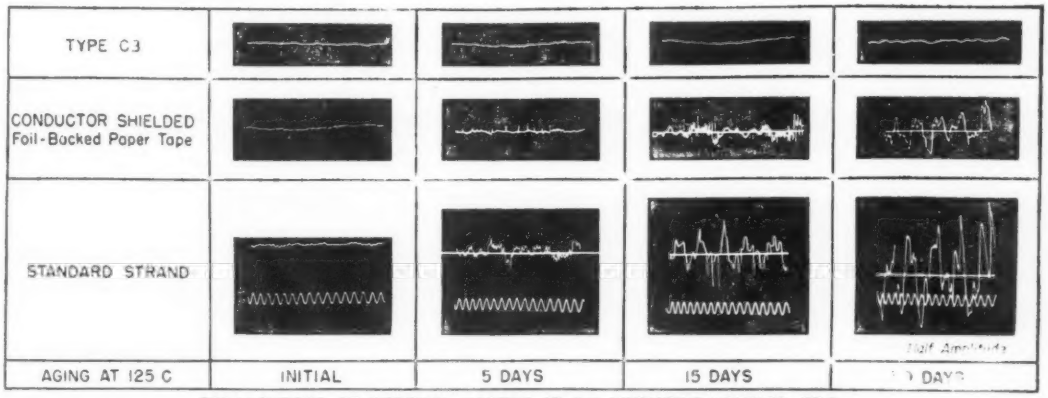
Sales Offices in Principal Cities

AND F-3 ALLOY SHEATH

ADVANTAGES

1. ENDURABLE INSULATION

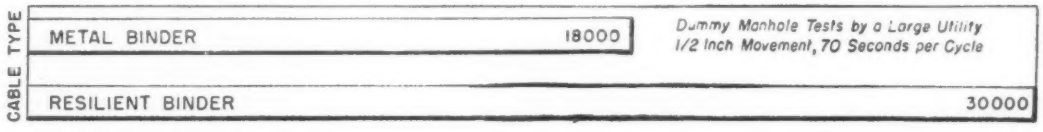
ELIMINATES IONIZATION (CORONA) DISCHARGES
INCREASES INSULATION STABILITY



OSCILLOGRAMS OF INTERNAL CORONA AT 2 X OPERATING VOLTAGE, 25 C

2. RESILIENT BINDER

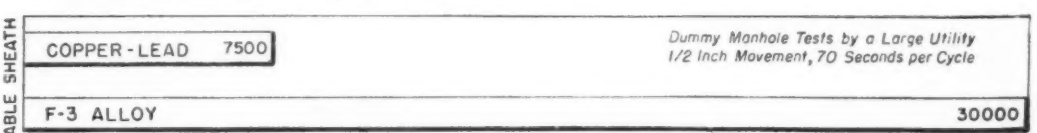
CUSHIONS SHEATH
CONDUCTS RADIALLY
WITHSTANDS MECHANICAL STRESSES



AVERAGE LIFE TO SHEATH FRACTURE - CYCLES

3. INDEFATIGABLE SHEATH

GREATLY INCREASES SERVICE LIFE
RESISTS SLOW-BENDING FATIGUE, CREEP (EXPANSION), BURSTING, ABRASION, VIBRATION, FATIGUE
REMAINS STABLE—PROCESSES SATISFACTORILY



AVERAGE LIFE TO SHEATH FRACTURE - CYCLES

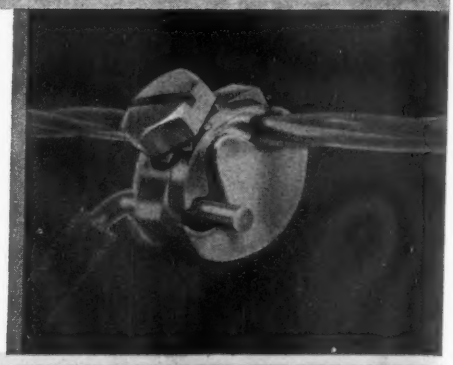
References: AIEE Technical Papers 40-121, 46-115 and 47-91—Reprints available upon request.

ANDERSON *Service Taps*

ST-2 Copper to Copper
Bronze Clamp

Either or both grooves accommodates the following range of sizes:

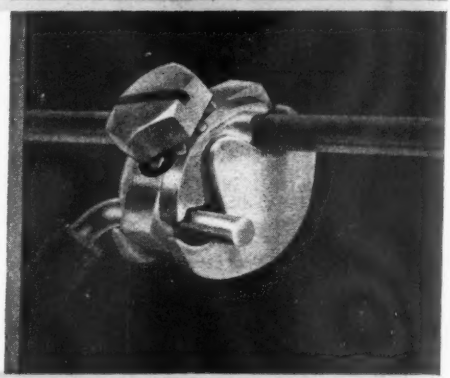
#8 to #2 Copper
#4A, #6A, #8A Copperweld
#6 to #12 Amerductor S C P



STP-2 *Aluminum to Aluminum Aluminum to Guy*
Bronze Clamp, Cadmium Plated

Either or both grooves accommodates the following range of sizes:

#6 to #12 Amerductor S C G
#4 to #8 Amersteel Solid
#6 to #8 Amersteel 3-wire
#6 to #8 Ruralductor and Crapo
#4 to #6 A C S R
1/4" Guy Strand

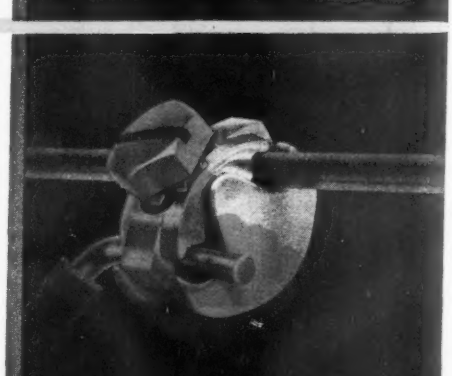


STP-2-C Copper to *Aluminum* Copper to *Guy*
Bronze Clamp, Cadmium Plated One Groove

This Universal Clamp will accommodate the following range of sizes in their respective grooves:

COPPER
#2 to #8 Copper
#4A, #6A, #8A Copperweld
#6 to #12 Amerductor S C P

ALUMINUM and GUY
#4 to #6 A C S R
1/4" Guy Strand



The ST type of Service Tap is far superior to other makes in ease of installation, conductance and long service life. Bimetallic inserts not necessary when using new insulated aluminum service wire. Electrolysis is reduced to a minimum when using STP-2C, as aluminum service wire cannot come in contact with a metal having marked difference in potentials. Exhaustive vibration tests on these tap clamps have demonstrated their outstanding qualities. And remember — inventories are reduced because one size clamp accommodates several wire sizes. No wonder more Electric Utilities purchased these service taps during 1946 than ever before. Other sizes are also available.

Write or wire your nearest Anderson representative, or direct to

ANDERSON
BRASS WORKS, INC.
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Manufacturers, Bronze and Aluminum Electrical Connectors for Sub-Station, Transmission and Distribution Work.

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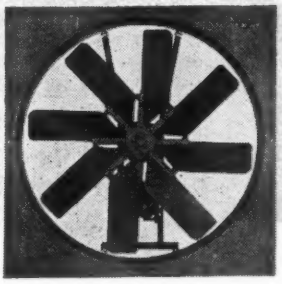

Coolair TRADE MARK Attic Fans

COOLAIR ATTIC FANS are built by the American Coolair Corporation, leading maker of attic fans since 1928. They embody exclusive *patented* features that can be found in no other attic fan! They are *precision-built* of the finest-quality materials obtainable. And their efficient design assures the user of an extra-long life of trouble-free operation!

That is why we say there is *better value* in Coolair Attic Fans . . . value that is built-right-into every fan! The Manufacturer's Warranty backs-up all statements that are made of Coolair superiority.

• • •

Customers these days are waiting and hoping for just this kind of quality merchandise. To assure yourself of complete customer-satisfaction, and of increasing profits from your fan business, get in touch now with your *Coolair* distributor or agent. There are many opportunities awaiting far-sighted business men.

A full description of the Coolair line, with tables showing models, dimensions, performance data, etc., can be found in

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A.S.H.V.E. GUIDE — ELECTRICAL BUYERS REFERENCE

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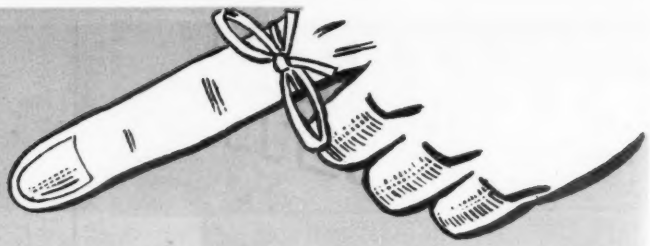

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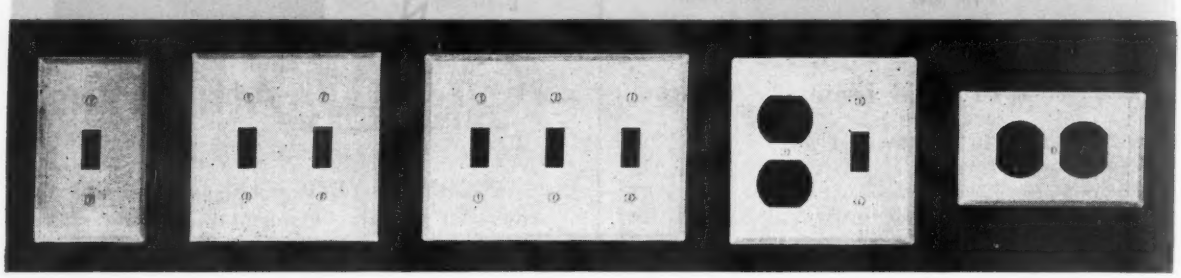

LIGHT, BREAKPROOF, BEAUTIFUL

ORDER BY CATALOG NUMBERS

"ALUMINEX" BROWN

BS-1 "Aluminex Brown" Single Gang Switch Plate
BS-2 "Aluminex Brown" Two Gang Switch Plate
BS-3 "Aluminex Brown" Three Gang Switch Plate
BR-1 "Aluminex Brown" Duplex Receptacle Plate
BC-2 "Aluminex Brown" Combination Plate
BB-1 "Aluminex Brown" Blank Plate
BP-1 "Aluminex Brown" Pushbutton Plate
BT-1 "Aluminex Brown" Telephone Plate

"ALUMINEX" IVORY

IS-1 "Aluminex Ivory" Single Gang Switch Plate
IS-2 "Aluminex Ivory" Two Gang Switch Plate
IS-3 "Aluminex Ivory" Three Gang Switch Plate
IR-1 "Aluminex Ivory" Duplex Receptacle Plate
IC-2 "Aluminex Ivory" Combination Plate
IB-1 "Aluminex Ivory" Blank Plate
IP-1 "Aluminex Ivory" Pushbutton Plate
IT-1 "Aluminex Ivory" Telephone Plate

"ALUMINEX"

AS-1 "Aluminex" Single Gang Switch Plate
AS-2 "Aluminex" Two Gang Switch Plate
AS-3 "Aluminex" Three Gang Switch Plate
AR-1 "Aluminex" Duplex Receptacle Plate
AC-2 "Aluminex" Combination Plate
AB-1 "Aluminex" Blank Plate
AP-1 "Aluminex" Pushbutton Plate
AT-1 "Aluminex" Telephone Plate

BRASS

CS-1 Brass .040 Gauge Single Gang Switch Plate
CS-2 Brass .040 Gauge Two Gang Switch Plate
CS-3 Brass .040 Gauge Three Gang Switch Plate
CR-1 Brass .040 Gauge Duplex Receptacle Plate
CC-2 Brass .040 Gauge Combination Plate
CB-1 Brass .040 Gauge Blank Plate
CP-1 Brass .040 Gauge Pushbutton Plate
CT-1 Brass .040 Gauge Telephone Plate

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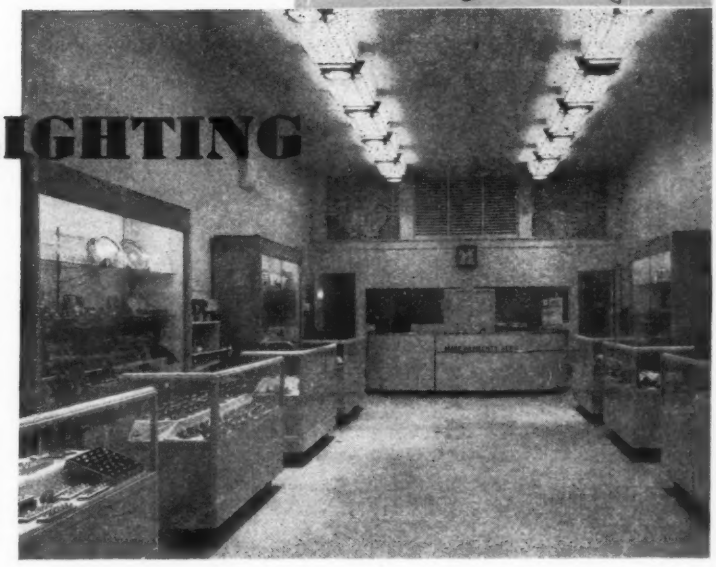


PLANNED LIGHTING

A Program for the Electrical Industry

By J. S. Schuchert*

"PLANNED LIGHTING Means Profit Load"—is the keynote of the industry-wide Planned Lighting Program sponsored by the Edison Electric Institute. The co-ordinated approach to lighting sales made possible by this program offers the industry increased sales of electric energy and lighting equipment; improved public relations; use of the concept of Planned Lighting to serve as a standard in all lighting installations; and a means of combating irresponsible salesmen of unsound lighting equipment.

The necessity for this program is indicated by the vital contribution of the lighting load to electric utility net revenues. "Many factors, such as low selling cost, advertising value, good load factor, no saturation, low mortality, high power factor, no competitive methods and tangible customer satisfaction mean that, generally speaking, lighting load produces greater kilowatt-hours and revenue per dollar of plant investment, per dollar of operating cost, and per dollar of selling cost.

Many utilities would have a difficult time operating without the high net profit of their lighting loads, but this lighting load is in jeopardy. The threat can be very serious, but it can be turned into a grand opportunity.

Successful lighting sales programs are not developed over night. Your customers are not sold by one call or one campaign. Changes in trends or methods are accomplished only by the aggressive, persistent offense of an industry which eventually results in customer acceptance. If you agree that lighting load is profitable, you must do your missionary work now—not after all your other problems are settled. It may be too late then.

The Planned Lighting Program is aimed at providing customers with modern lighting installations, designed to serve economically and efficiently their specific living, working, and selling needs. All customers in five major markets—residential, store, school, office, and industrial—will be urged to have their lighting installations planned according to the latest practices in lighting, before buying any equipment. The program will help prevent the wasteful and disappointing application of the marvelous new light sources available today.

Offers a New Approach

While all branches of the industry have been planning lighting in the past, the present problem, the program, the methods, and, primarily, the sales approach employed in the Planned Lighting Program are radically different.

Surveys and studies of the lighting market indicate that stereotyped methods of the past cannot cope with the present situation. Every branch of the industry has been affected by basic and far-reaching changes, by the new light sources and types of lighting equipment now available, and the public's desire for something new in lighting, and the increase in the number of manufacturers and sales outlets of lighting equipment. A revolution has occurred in the lighting industry.

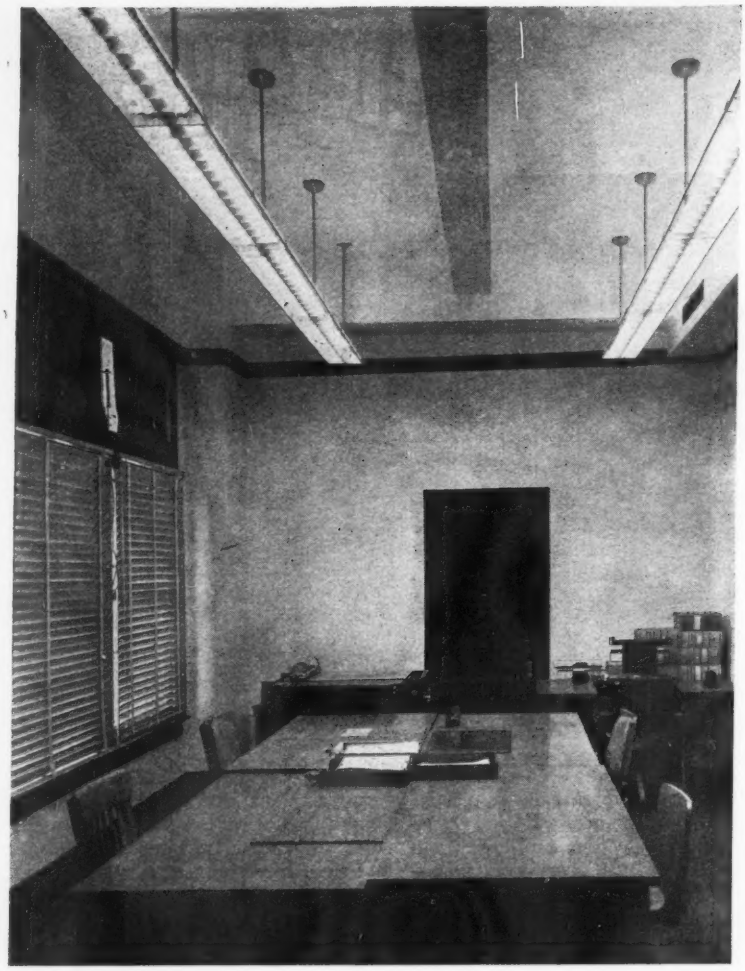
To meet this situation, we realized that we needed a standard-bearer, a means of guiding our customers and co-ordinating our sales efforts.

Flexibility Featured

The Planned Lighting Program, which was developed to meet this need, is most flexible, and can be used by manufacturers, distributors, contractors and utilities, on both a local and national level. We just tell our customers to have their lighting planned before they buy it. That makes good sense. No one can argue with it, and every branch of the industry can support it. Whether the customer plans to buy one fixture or two hundred fixtures, he can have a plan made for his installation, without cost or obligation.

When built up properly and executed effectively, Planned Lighting infers guaranteed good lighting. It's an implied certification. It has great customer appeal, and can be a strong promotional weapon. For all our markets — homes, stores, offices, schools, factories—we can apply the Planned Lighting theme straight across the board. Thus, we have a standard-bearer, which can lead all

*Mr. Schuchert is chairman of the commercial section of the Edison Electric Institute, and manager of commercial sales for Duquesne Light Company.



SOLD THEMSELVES FIRST—The Tampa Electric Company, of Tampa, Florida, is another company that relighted its own offices as part of its promotional program on Planned Lighting. This view of the stenographic department shows the continuous rows of fluorescent fixtures mounted 8 feet apart and 11 feet above the floor which provide 45 foot-candles in service.

branches of the industry to the development of this market on a scale never before thought possible.

The idea of Planned Lighting can be applied effectively to the customer now considering making a change in his lighting, by urging the necessity for a soundly-designed plan to "be sure before buying." The customer who is not planning to make a change should be sold on the need for a plan, at the same time he is being convinced of the benefits of Better Light, in order to prevent unwise purchases of lighting equipment.

For effective use of the Planned Lighting Program, utility representatives, lighting engineers and salesmen, must be trained in both the technical and sales phases of the program. Customers must become familiar with the concept of "The Man Who Plans"—the utility lighting salesman whose services are always at their disposal in planning improved lighting layouts. The power company can also render effective assistance to wholesalers, jobbers, dealers and contractors in providing planned lighting layouts, until their own personnel has been trained to render this service. The product advertising and personal contacts made by other branches of the industry are of particular importance in insuring the success of the Planned Lighting Program.

The materials to be made available in the program include an over-all plan book, explaining the reasons for the program, and its importance to the power company, which is being distributed to chief executives of the industry. Individual plan books are being prepared for each of the five major lighting markets — residential, store, office, school, and industrial.

Each plan book describes the characteristics of the particular market, the potential revenue that may be secured by organized sales efforts, and the sales organization and operating methods best suited for successful selling in this field. Also included are samples of all the advertising and promotional materials prepared for use in each field.

The plan book for store lighting presents a series of twelve direct mail pieces; a consumer booklet, containing a number of profitable lighting modernization ideas; a sample of the planned lighting layout form; several newspaper advertising suggestions, and a sales visualizer, for use by the salesman in customer contacts. All promotional materials offer the free "Planned Lighting" service, and build up the idea of "The Man Who Plans."

The residential program will present an educational and promotional program, directed to the existing and the new home markets, with a school project that will assist in teaching on "Light and Sight" in schools.

Material directed at the new home market includes a prospectus for speculative builders, a booklet on lighting and wiring, and special direct mail pieces. The existing home market is covered by booklets containing lighting modernization ideas, and an extensive series of direct mail pieces.

The Better Light Better Sight Bureau is making available educational booklets, motion pictures, slide films, newspaper and radio advertising suggestions, lecture outlines and demonstration ideas.

Among the sales tools included in the residential program are exhibits, demonstrators and other types of sales helps; a sales training film on home lighting, which will tie-in with the Edison Electric Institute's Sales Training Program; point of sale merchandising material, which will include a plan book and other sales helps.

The school project will include bulletins, posters, pamphlets for students and other material, which will be suitable for use by elementary schools, science classes of high schools, and home economics classes.

The Planned Lighting Programs for offices, factories and schools will be supplied in as complete detail, and with an equal wealth of supporting materials, as the store and residential lighting campaigns. The store lighting program material is ready for use now, with the others scheduled to follow within the next few months.

RADIANT HEATING WALLBOARD

Conductive rubber utilized in wallboard paneling units to provide radiant heating. Experimental installation in Knoxville, Tenn., indicates idea is practical and economical.

AN ELECTRIFIED ceiling, from which heat is radiated from conductive rubber panels, has been installed experimentally in a modern new home built at Knoxville, Tenn.

The occupants of the house, the builder, the electrical contractor, and the United States Rubber Co., which developed the new material, report that the installation is operating successfully. A special meter was installed by the Knoxville Utilities Board to determine electrical energy costs.

The home, first of its kind in the United States, was designed and constructed by the Fonde Construction Co., of Knoxville. Stuart Fonde and his associate, M. L. Bartling, Jr., have for eight years been developing and building homes with electric heat. They built the sub-division of Meadow Hills, with its 52 electrical homes. The new experimental home is in Meadow Hills. Fonde's pioneering work on electrical homes made him nationally known, and it was largely because of that that one of his new houses was selected for the electrified ceiling tests.

Briscoe Electric Company made the electrical connections.

Each room and the glass-enclosed porch have been equipped with the radiant heat ceiling panels.

The panels are four feet square. They could be made any size. They consist of an element of conductive rubber cemented in between two thin layers of plastic insulation.

One of the paradoxes is that rubber in the past has always been known as one of the best insulators against electricity. Now that is reversed. A special kind of rubber was compounded to conduct electricity. The conducting ingredient is finely-ground carbon black.

When voltage is applied to the units, the entire ceiling becomes uniformly heated to the desired temperature to make the room comfortable. Each room or area to be heated is separately controlled by a thermostat.

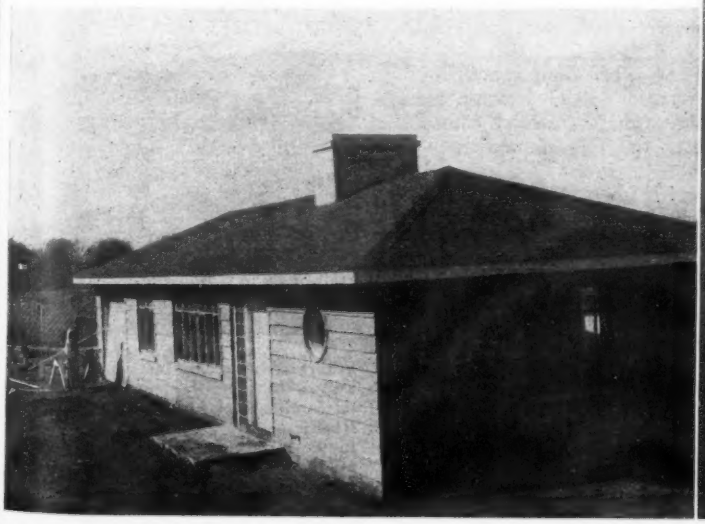
The system produces uniform temperatures from floor to ceiling, and there are no drafts or cold spots. Floor temperatures are four to five degrees higher than in homes of similar size and construction which are heated with convector heaters. Children in light clothing can play on the floor with comfort and safety.

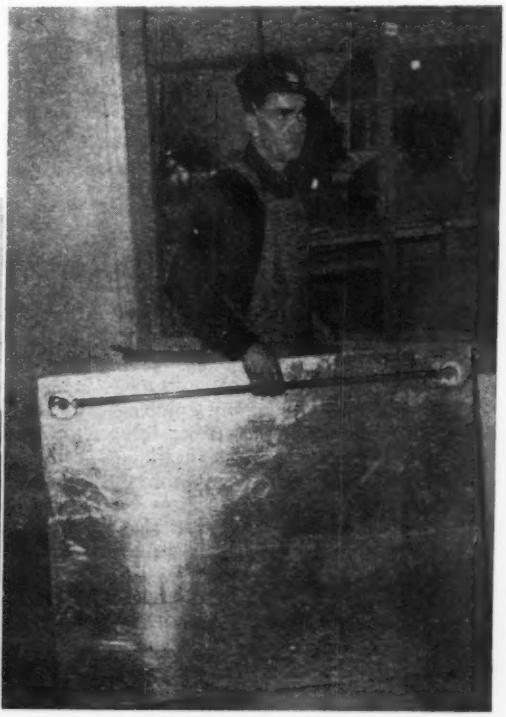
It is the conductive rubber that heats. Electricity is carried to the edges of the panels by copper wire. The voltage applied to the edges of the panel causes a current to flow through the entire panel. The energy losses in the panel are dissipated as heat at the surface of the panel.

Cost of installing the ceiling is about the same as for any other ceiling, but an electrician needs about two days to connect the wiring.

The panels used in the experimental home were four feet square, each containing a total of 16 square feet

Shown below is the house constructed by Stuart Fonde and M. L. Bartling, Jr., in Knoxville, which includes the experimental installation of conductive rubber ceiling units recently developed by U. S. Rubber Company. At right is one of the units. The upper side is shown upon which is mounted outlet boxes and conduit. Each four-foot square panel has approximately one ampere flowing through it when energized at 240 volts. Rating of each such panel is approximately 256 watts.





After panel units are installed, ceiling can be papered or lightly plastered without impairing its heating efficiency. Mrs. Helen Clayton shows how invisible the panels are after ceiling in the experimental home was papered.

of surface. When a voltage of 240 volts is applied along opposite edges of one of the panels, a current flow is established through the conducting material of the panel. The electrical losses amount to about 16 watts per square foot or about 256 watts for each four-foot square unit of the material. The current flowing is a little more than one ampere per four-foot square unit of the material.

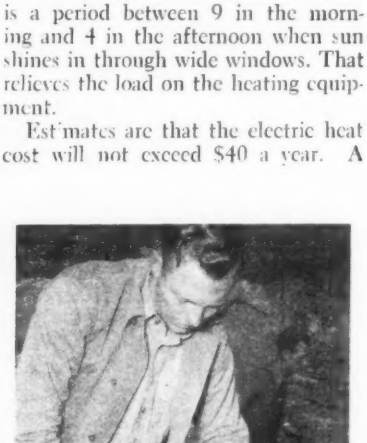
As supplied for the experimental installation, each unit comes wired ready for mounting, with two outlet boxes and a section of rigid conduit mounted on the upper side of the panel. Solderless connectors were used throughout, and the units for each room were connected in parallel by means of short panel-to-panel armored cable jumpers. The entire group for a room terminates in a single No. 12 cable. The largest number of panels connected to a single circuit was 14 representing a circuit of approximately 15 amperes.

Fuses supply overcurrent protection, and each room has a separate thermostat to regulate the heating. In operation, the panels attain a maximum temperature of 110 degrees F. However, experience indicates that the temperature recorded about a foot below the ceiling will be about 73 degrees while the temperature at the floor will be about 68 degrees when the thermostat is set for 70 degrees.

The new heating system was first turned on in February and has been operating ever since. The home is occupied by Mr. and Mrs. Harrison J. Hines, who report they have never before enjoyed so much comfort in cold weather. They papered the ceilings, so that the panels are not visible. It is impossible to tell where the warmth comes from, as there are no radiators, registers, or any kind of a radiant heating panel to be seen.

The house faces southeast. There is a period between 9 in the morning and 4 in the afternoon when sun shines in through wide windows. That relieves the load on the heating equipment.

Estimates are that the electric heat cost will not exceed $40 a year. A



Key to practical and economical electrical heating for homes is in good insulation. In this experimental home, a new type of cinder block was used. Each block was filled with insulation providing a thoroughly insulated wall.

group of 14 other homes built by Fonde averaged $38.92 a house for the winter. These costs, of course, are based on the TVA domestic power rate.

In one 87½-hour heating period, during which the temperature was 20 to 25 degrees outdoors, the radiant ceiling home was kept at a temperature of 70 degrees at a cost of about 25 cents a day.

Edward Lebo, of the United States Rubber Co., was asked, while in Knoxville, to tell something of the experiment.

"This, the first home of its kind in the United States, is on an experimental basis," he said. "The panels were made by hand and naturally cost more than they will when they go into mass production. The cost of heating, once installed, will not exceed that of conventional heating, apparently. It might even be lower, because there is no need for as high a temperature.

"The entire home, materials and all, were engineered with the idea of being in the lowest price bracket for a quality home. Every part in the home has some relation to the other. Electric heat is made to work cheaply.

"First emphasis was on ceiling heat, then on a house designed to be lower in cost. The Power Board has installed a meter separate from others, so that it is possible to tell the exact amount of current used for the ceiling heat.

"It would be possible to put conductive rubber panels in the walls, even under the floor. The use is not limited. However, it is generally conceded that the ceiling is the place for radiant heat. It is the closest thing to natural heat of the sun. You have indoor sunshine, without the light.

"The home has a concrete floor. There is no cellar. Rays from the ceiling come down, establish some heat in the floor, bounce back and disperse throughout the room. With this type of radiant heat, lower temperatures prove comfortable. There is as much comfort at 70 in this home as at 72 and 74 in houses heated by other means.

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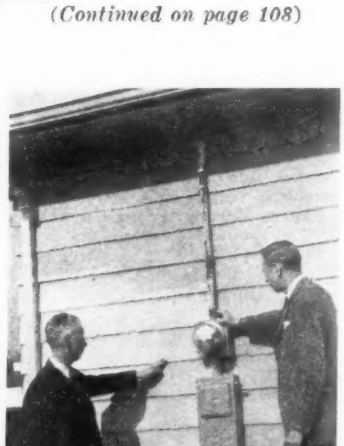


Stuart Fonde, at left, nationally known builder of electrically heated homes, and his associate, M. L. Bartling, Jr., examine the test meter installed for the experimental installation in order to determine the exact power requirements of the radiant heat panels.

Retail Association Studies Trade Discount Survey

MANUFACTURERS are responding favorably to the request of the National Electrical Retailers Association for a halt in the trend of shorter trade and cash discounts, according to C. C. Simpson, managing director, Washington, D. C.

Replies to the letter written by NERA on March 14 to all electrical manufacturers, he said, indicate that firms manufacturing one or two specialized items are inclined to offer longer discounts than producers of larger, more complete lines.

An outstanding majority of firms replying have reported trade discounts of from 40% to 45%, depending in some instances on quantities purchased, and a majority of them are also giving 2% cash discounts.

Recommendations Well Received

Speaking on behalf of the association's Committee on Manufacturers-Wholesalers Relations, Mr. Simpson stated there were no outright rejections of the NERA recommendation in replies so far received, although some manufacturers made indefinite statements or admitted their discounts were lower than the 40% figure recommended by the NERA Committee. Others readily admitted the need of larger discounts and said they hoped soon to announce them.

The manufacturers who defended their shorter discounts, he reported, did so on the basis of two arguments —the increased costs of distribution and production, and the adherence to OPA discounts established during the war. Others stated that the matter of trade discounts rested entirely with their distributors.

"We are all well aware that manufacturers' cost have gone up, but they should not forget that dealers' costs have gone up, too," stated K. J. Stucky of Stucky Bros., Ft. Wayne, Indiana, who is NERA Governor for Region 7 and a member of the Manufacturers-Wholesalers Relations Committee.

"On the other hand," Stucky said, "efficient operations and volume production *should* merit a 40% margin without upsetting the retail price. The lower margin of the last few years has gone hand in hand with reduced sales efforts. If continued, low margins *could* eliminate volume distribution and production. Thus, by reducing production, unit costs will increase to a point where the manufacturer may put himself out of business so far as that particular line of products is concerned. It is volume distribution and the resultant volume production of the manufacturer that will retain desirable prices and a healthy economy for everyone."

Adding further weight to Mr. Stucky's remarks about dealer costs, Harold C. Taylor, L. C. Taylor Co., Pasadena, California, likewise a NERA Governor and Committee member, stated, "Before long, advertising, promotion and sales expenses for the dealer are sure to go up. Trade-ins will move back into the picture, and an occasional discount on floor samples will be necessary. Rents in Pasadena are now higher than I can ever recall in my twenty-one years in business here. Manufacturers should certainly realize that before a dealer can increase his overhead, he must have the margin to take the strain. The only way he can get that margin is to operate percentagewise. This is an absolute necessity."

All members of the NERA Committee echoed this statement regarding percentagewise operation.

Typical Dealer Reaction

That manufacturers' costs cannot possibly be absorbed by the dealer without sufficient margin to cover them is the point made by Committee member Lillian C. Johnson, Modern Home Store, Bremerton, Washington. As a notable example, she cited the case of trying to merchandise a small portable radio.

"A year ago, when our first sample came in, this model was priced at $32.05. We held it and took names for a list for notification. Recently we received a half dozen of this model and started to call those on our list. But the customers objected that when they put their names on the list the radio was priced at $32.05, *with* batteries, and now we must ask them for $44.95 and $2.67 more for the batteries. Their replies were an obvious 'no thank you.' We have yet to sell one radio at the greatly increased price. This price still does not allow the dealer any greater discount."

On the subject of dealer promotion costs, NERA Managing Director Simpson pointed out that included among the manufacturers who replied that increased costs prohibit their giving the accustomed prewar dealer discounts were two well known washer manufacturers. These manufacturers do, however, give dealers a discount close to 40%, and in addition, they are providing a 50% advertising allowance, and other genuine helps, which save money a dealer would normally have to spend on some other line and which tend to increase his net profit.

It is certainly true, Mr. Simpson stated, that many manufacturers do a commendable job in building up public acceptance for their products by spending large sums on national advertising. The association believes though, he said, that these manufacturers are doing this to help themselves as much as the dealer.

"Regardless of fine advertising done, the Committee feels the dealer still has to do expensive sales promotion himself in order to meet local competition on lines also advertised on a large scale," he said.

"Particularly is this competition keen between large stores and the smaller specialized shop," said Mrs. Johnson, of Bremerton. "At the present time, our advertising is very great in proportion to sales, but it is a necessary item. This brings up the question why some manufacturers seem to think the big stores should have greater discounts, when shoppers come to them more easily through their varied departments than they do to the smaller store. A large store operator can also take losses in one or more departments and compensate for them in other departments, but the independent electrical retailer does not have that advantage."

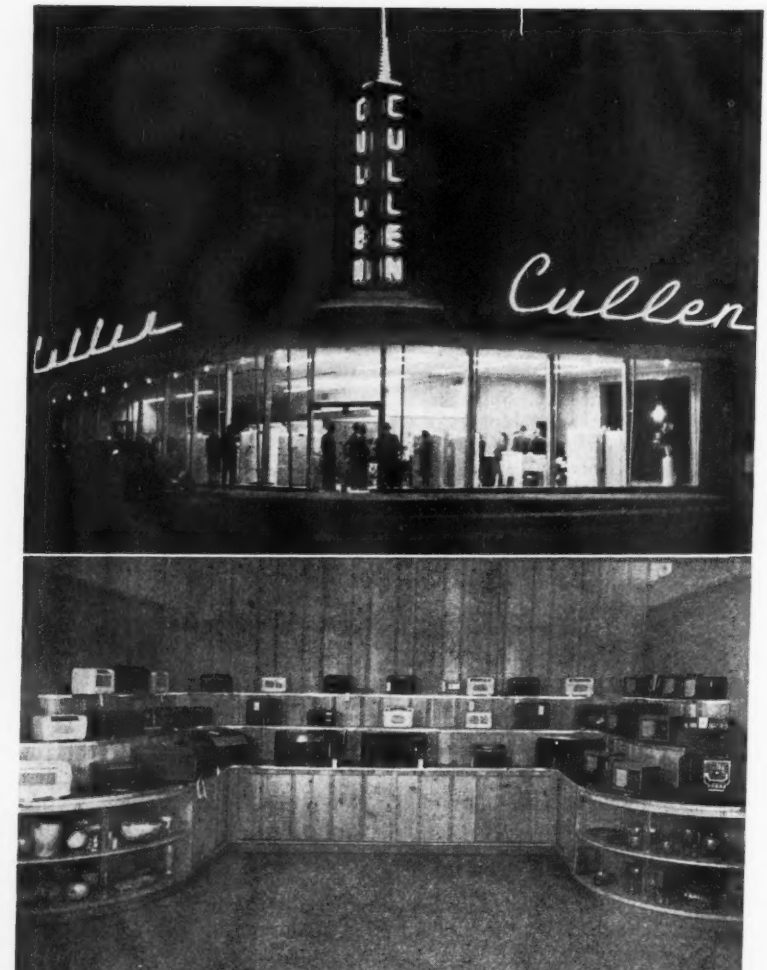
"The NERA Committee is pleased to note that not all manufacturers have remained under the OPA schedule," stated the Committee Chairman and NERA Governor Herb Names, Herb Names, Inc., Denver, Colorado. "Several manufacturers have volunteered the information that they had to follow the discounts prescribed by OPA, but when the industry was decontrolled, they went back to their previous higher discounts.

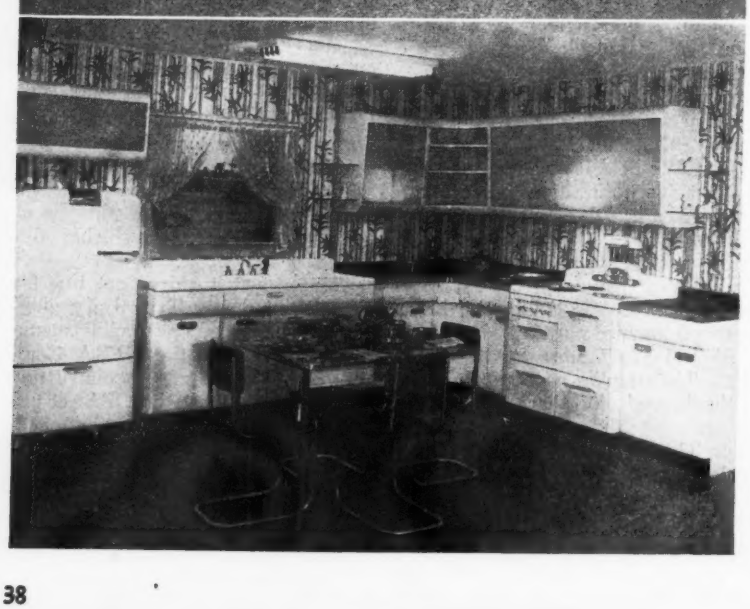
"Unfortunately this is not true for the entire industry. Typical of a number of comments, one leading manufacturer has told the NERA Committee that their trade discount structure is exactly what the OPA set up, and that they are following the schedule which they understand most of the industry is doing."

Mr. Names added that "manufacturers may be assured there is not a

(Continued on page 105)

Appliances Displayed for





SPACIOUS DISPLAY, excellent lighting, and ample outlets for the actual connection and operation of appliances on display are the outstanding features of the Appliance Shopping Center opened recently by Cullen Lumber Company, of Oklahoma City, Oklahoma.

The new store was especially designed to show appliances under the most advantageous conditions. Similar display is provided for the company's hardware and building supplies departments located under the appliance display floor.

Every piece of merchandise gleams attractively under 65 foot-candles of fluorescent lighting in the spacious show room with more than a thousand square feet of floor space. In the store are 336 electrical outlets. Electrical appliances and equipment are kept connected to them so that the devices are ready to operate singly, in groups, or all at one time. At the push of a button, a shopper may operate any particular appliance and see exactly how it will work in his own home.

Three shining streamlined kitchens stand by, with ranges, refrigerators and all other household equipment connected into 110 or 220 volt outlets, with water and other utility connections conveniently near to complete the demonstration if these aids are needed.

Electrical outlets for both 110 volt and 220 volt service are provided along the main display room floor at intervals of ten feet. The higher voltage is available for the operation of electric ranges and other heavy-load electrical equipment. The building is wired to provide 400 amperes load capacity. Room is left in the electrical distribution system for additional panels when required.

Cullen Lumber Co., and Wether-

(Top) Night view of Cullen's "Appliance Shopping Center," in Oklahoma City, Oklahoma. The large angle-type show windows give an unobstructed view of the interior display. (Center) The table model radio display booth. Outlets are provided at intervals so that every model can be operated. (Below) One of the gleaming demonstration kitchens—all appliances connected. Besides the spacious display space provided and the numerous outlets, the store is unusually well lighted.

Demonstration Operation

bee Electric Co., which made the installations, believe that this is the most unique and complete electrical appliance store installation in the Southwest, if not in the entire country.

Modern electrical illumination, also, is putting its very best foot forward. A total of 52 four-tube, four-foot fluorescent troffer lighting units are recessed in the ceiling of the main display room behind Skytex glass. Pan-type surface fluorescent fixtures on the ceiling illuminate the building supplies and hardware show room, one flight of stairs below the main appliance shopping center. Sixty-five foot-candle lighting intensity, also, is provided there. Recessed fluorescent lamps illuminate the offices on the second floor with daylight effect.

Added to this efficient over-all lighting job are 27 incandescent spotlights set along walls and show windows near ceiling levels. These can be controlled individually, in groups, or as a whole, to throw revealing floods of light into any display booth, demonstration kitchen, or upon any group of appliances which may be under special observation or demonstration.

The two street fronts of the new appliance store are enclosed with 12-foot high, 7-degree angle plate glass show windows to reduce annoying reflection. These give a clear view night or day throughout the store from the sidewalk or street.

Small appliances are arranged on tables and shelves in special booths at convenient levels for observation and operation by customers. In the radio display booth are 86 electrical outlets into which are connected at all times a number of models of the three standard makes carried by this dealer. Another attractive display

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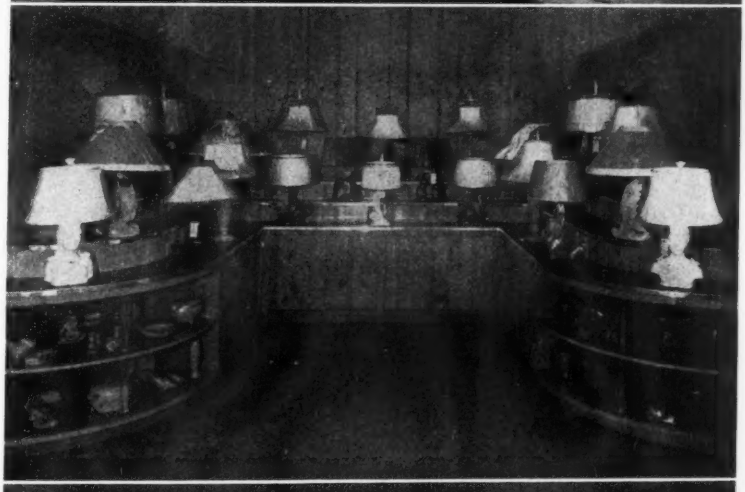
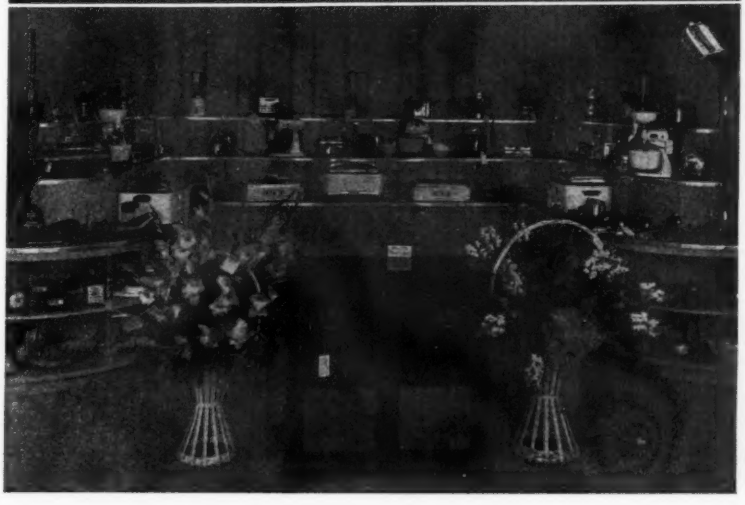




(Top) Another view of one of the all-electric kitchens, completely connected for demonstration of individual appliances. Other major appliances such as washers, ironers, etc., are on display. Electrical outlets on the main display floor are located every ten feet and provide both 110 and 220-volt service. (Center and bottom) Like the small radio display booth, the booths devoted to lamps and table appliances have numerous outlets.

SAFETY Through TRAINING

Training course for linemen is supplying company's need for skilled, safe workers.

By H. B. McMahan*

IT TOOK A WAR and the resulting scarcity of qualified linemen to establish the need for capable linemen so urgent as to demand action. Today's lineman is a specialist. The work which he does is of a highly skilled nature, and his training, if he is to become a safe workman, must be very careful and thorough.

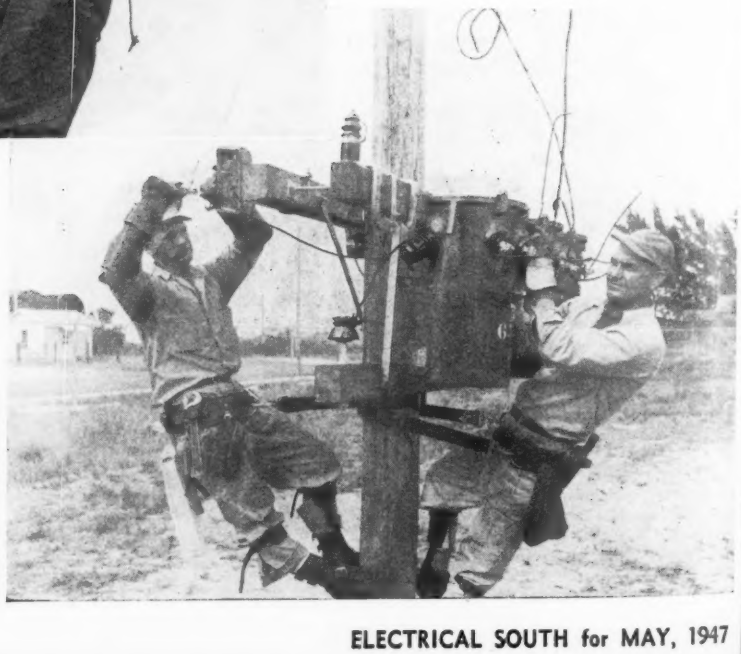
Realizing the need for intensive training to make safe linemen, this company early in 1946, after having given serious thought to labor market possibilities for the year, decided to set about training its own linemen. A committee was formed to draw up the skeleton plan. In seeking personnel best qualified to do this training, the company chose a man with 21 years' experience in line work. Included in this 21 years' background was 15 years as a line crew foreman. This most certainly combined a wealth of experience which proved quite satisfactory.

In order to assure uniformity in training, those in charge felt it was necessary that the course structure be set up in advance; so after a period of several weeks, and with the co-operation of a neighboring utility company, the training manual for this work was completed. This consisted of two courses: first, a basic course designed to furnish the skills necessary to enable a groundman with reasonable diligence to qualify as an apprentice lineman; and second, an advanced course of training which should qualify the apprentice lineman for the duties of a journeyman lineman.

It was assumed that the work laid out could be covered by the average man in a period of 160 hours or four work weeks. It consisted largely of practices in the actual skills needed in becoming a lineman—learning to set poles, to climb, to work comfortably in climbing tools, to handle working tools with ease and dexterity.

A study of safe methods was incorporated as a primary part of the course. As a matter of fact, it was agreed from the start that combined with the Training Manual would be both the company's Safety Rules and Distribution Specifications. The wisdom of this decision has never since been questioned.

Upon the completion of the Training Manual, a series of discussions was held among division and district managers, engineers, and line foremen



"Learning by doing" is the keynote of Florida Power Corporation's training course for linemen. Designed to qualify linemen not only from the viewpoint of skill but also as safe workers, the course required full time of the men for approximately one month.

*Mr. McMahan is safety director for Florida Power Corporation, St. Petersburg, Florida.

throughout the system. The purpose of the course was outlined. The point was made very clear that all training in the program would be used to supplement that received in the field and that the course had been designed to assist in doing a job which the foreman, in all too many cases, did not have the time needed to accomplish —at least not in a relatively short period of time.

It was agreed that advancement from one classification to another should be at the recommendation of the foreman himself. This placed the burden of the responsibility for advancement on the trainee, as he must not only absorb the training outlined for him but must also convince his own foreman that by this added training he now qualified as a competent apprentice or journeyman. In this way, safe workmanship came into the picture, since no foreman wished to advance the trainee until convinced that he was a safe worker.

The first course was started with a group of eight men. These men were selected from the various divisions of the company on the basis of seniority and ability.

It was only reasonable to expect that at the outset of any new project such as this, the employees selected might look forward to the training with a slight degree of apprehension. Every effort was made right from the start to clear away in the trainee's mind any misunderstanding. The company's purpose behind the move was carefully and thoroughly stated, the possibilities of advancement as the result of diligent application were pointed out, and every effort was made to clear the way for each man to feel at home, "let his hair down," so to speak, and get down to the serious business of asking questions and learning.

Arrangements had been made previously whereby all out-of-town men stayed at one convenient location only one-half mile from the training ground. In this way, warm meals were available at noontime and a friendly and home-like spirit developed.

While the course was designed primarily for the teaching of linemen's skills, a great deal of practical theory

Actual work on poles and lines was supplemented with classroom studies and equipment discussions and demonstrations. When the course was completed, the men had learned not only the immediate skills required of them, but had become familiar with the general theory underlying electric distribution and the operation of electrical equipment.

The Florida Power Corporation's committee responsible for its successful lineman training program represented management, personnel, engineering, and operations. Left to right, they are: J. F. Bailey, vice-president; V. R. Parrack, supervisor electrical engineering; P. B. Locke, division engineer; J. S. Gracy, director of personnel; W. E. Moore, training director and assistant safety director; C. B. McCartney, superintendent of transmission and distribution; G. E. Turner, production superintendent; G. A. Grimm, director of operating departments; and H. B. McMahan, safety director.

also became a part of the course, so that study at night was necessary and was encouraged. The operating principles involved in various types of equipment with which the lineman works daily—transformers, cutouts, fuses, disconnects—something of the theory of electricity itself, and a working knowledge of transformer connections were all studied carefully.

The standard 20-hour American Red Cross course in first aid also was included as a part of the training. Special emphasis being laid on obtaining adequate training in pole top resuscitation, trainees received practice in this phase of work to the point where they were thoroughly skilled in resuscitation, change-over, and rescue work.

Early in the first course, it was seen that here was an excellent cross-section of embryo linemen and a wonderful opportunity to study progress in the months to come. Through the services of an industrial psychologist, tests were given each man to determine I. Q., manual dexterity, mechanical comprehension, vocational interests, and personality, and an analysis was based on the scores of these tests. A comparison of the results is being made with progress through the training program and in the field. This study may form the basis for similar tests to be used for pre-employment and placement purposes in the future.

A number of operating departments co-operated by assisting in the training of this and later classes. Inspection trips were made through the meter department, transformer shop, power plant, and dispatching office. An engineer from the transmission and distribution department lectured on the theoretical phases of line construction and maintenance and on the transmission and distribution of power in a modern system.

In addition, slides, sound slide programs, and motion pictures were used to drive home in the minds of these trainees the fact that a powerful tool was being placed in their hands—the knowledge of how to do a job safely and well.

When the first group completed its work, graduation exercises were arranged to celebrate the event, and two of the men participated in the program. Certificates of completion were presented each graduate. Two prizes were awarded on the basis of over-all accomplishments and greatest ability demonstrated throughout the period of training. Since the completion of this first course in advanced training, five courses have followed almost without interruption during the remaining months of the year. The number of men failing to complete the work through lack of ability has been very low, being less

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System Planning Simplified By Package Substations

PACKAGE SUBSTATIONS, incorporating as a completely co-ordinated, ready-to-assemble unit all of the hundreds of components and parts previously obtainable on a piece-by-piece basis for installation by the customer, have been announced by the General Electric Company. Officials of the Company's Apparatus Department term package substations a major development in a series of advances during the past decade toward standardization and co-ordination of electric equipment, and predict that they will facilitate further progress in overall system planning by utilities and industries.

The package substations are available in any one of hundreds of arrangements in ratings up to 45,000 kva, and will incorporate standard transforming, regulating, relaying, metering, and protective equipment, according to M. B. Elliott, manager of the Unit Equipment Division.

"These package substations represent a real means for realizing the fullest advantages of co-ordinated engineering and repetitive manufacture of standardized components," Mr. Elliott said. "We expect that real savings in production time and cost can be passed along to the customer."

Mr. Elliott stated that whereas in the past factory-assembled unit substations have usually included only the transforming, regulating, and switching equipment beyond the high-voltage entrance to the transformer, the new package substations are complete in every respect. "Just about everything but the real estate and the 'Warning' signs," as one engineer remarked.

The plan of offering a series of components completely co-ordinated and integrated into a single substation is a direct outgrowth of the idea of "repetitive manufacture" of certain apparatus that was adopted by the company several years ago. Switchgear and transformers were the initial apparatus to be produced under the plan of repetitive manufacture. The introduction of the unit substations was one step further toward the integration and co-ordination of standardized components. G-E engineers stated that the culmination of this entire program of co-ordination and standardization of substation apparatus is the package substation.

Components from Several Plants

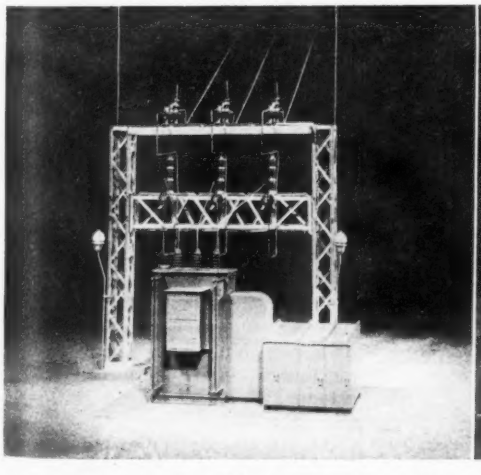
Under the package substation program, transformers and other allied equipment from the company's Pittsfield Works, and switchgear from its Philadelphia Works are all shipped to the customer's installation site on a co-ordinated time schedule. The various parts of the package substation are shipped to the customer in pre-assembled sections as large as transportation and handling facilities will permit.

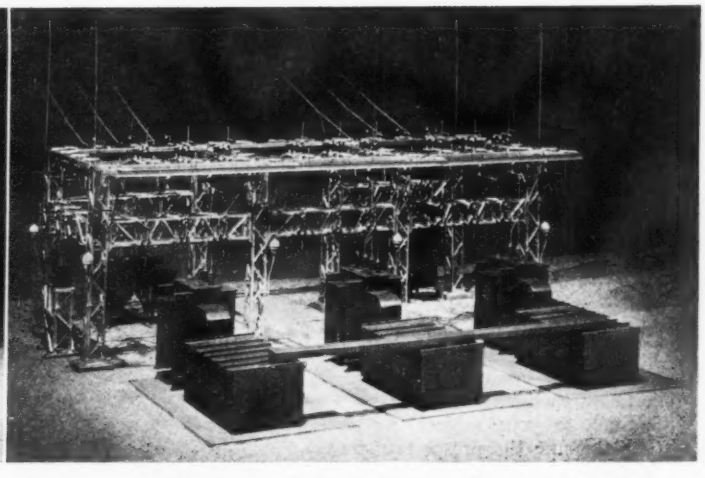
By utilizing standard equipment from various works within the company, G-E engineers stated that it is possible to cut delivery time and lower costs as these various components are made according to existing standard designs which can be readily carried in factory stock.

Experience has shown that having all components furnished by one manufacturer cuts engineering and drafting requirements and simplifies purchasing. Thus, one requisition covers all equipment for the package substation.

A high degree of flexibility to allow for future load changes is claimed in many of the package substation arrangements. For example, G-E engineers stated that a substation of the "multiple subtransmission - duplex" arrangement is very flexible in that single duplex units may be originally located near the centers of each load area, and when certain loads increase, additional duplex units can be added as building blocks exactly when and where they are needed. This proce-

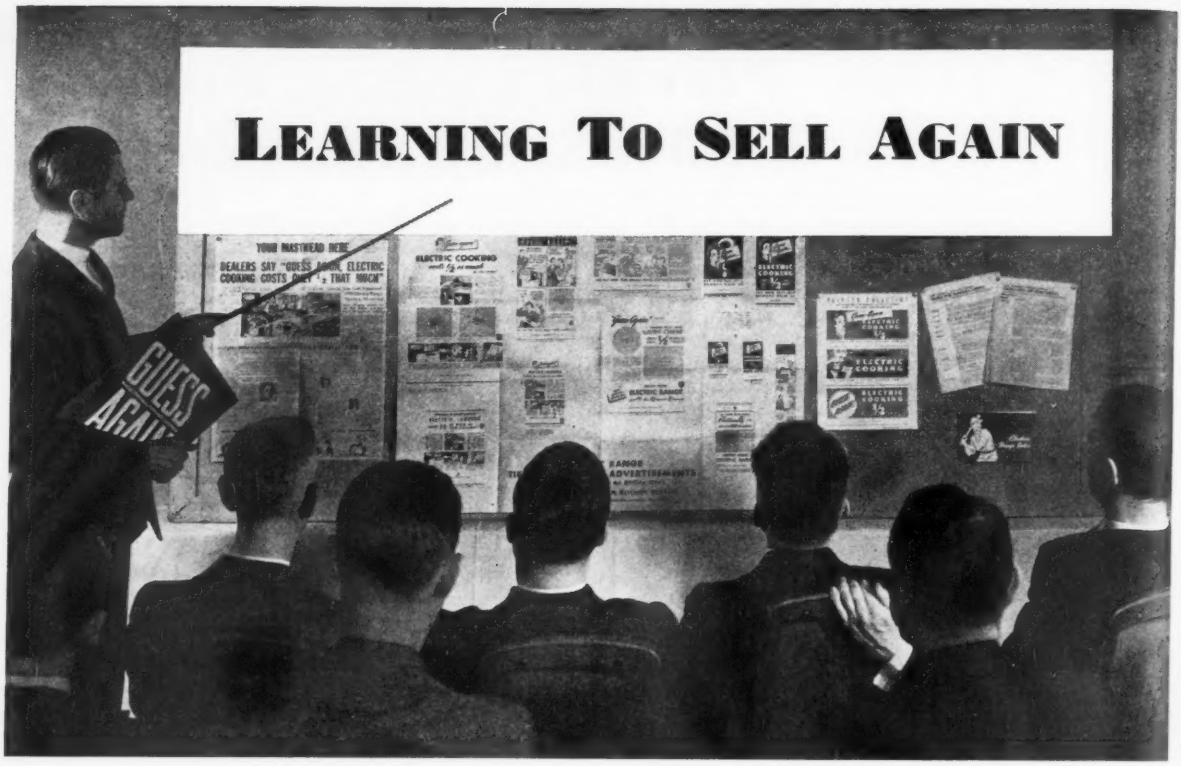
(Continued on page 108)





The trend toward "package" substations offers numerous advantages to light and power companies, including reduction of production time and cost. A high degree of flexibility obtained through standardization of components simplifies the problems of system planning. At left is one of the smallest of such package units—a radial unit with fused incoming line. At right is a low-voltage-selective substation for loop or multiple subtransmission system.

LEARNING TO SELL AGAIN


YOUR MASTHEAD HERE
DEALERS SAY "GUESS AGAIN, ELECTRIC COOKING COSTS ONLY ½ THAT MUCH"
GUESS AGAIN
ELECTRIC COOKING
RANGE ADVERTISEMENTS

By C. J. Coward

Director of Advertising and Sales Promotion for Kelvinator Division of Nash-Kelvinator Corp.

EVERY PROFESSION has its basic principles. A doctor recognizes certain symptoms and knows what to do. A lawyer studies the circumstances of a case, and knows how to proceed.

Likewise, selling has a few basic principles which have been discovered and developed by salesmen through the centuries.

The best of salesmen lose a percentage of sales, just as the best of doctors now and then lose a patient, and the best of lawyers now and then lose a case.

But the salesman will get desired results enough of the time to make it worth his while to study and *know* the 11 sensible essentials of successful salesmanship.

The essence of dozens of courses in salesmanship, the contents of many books, and the technique of many sales experts, these rules are:

1. Know your product
2. Classify your prospect
3. Get your prospect to participate
4. Learn to listen
5. Stick to your subject
6. Make sure the prospect understands
7. Encourage agreement
8. Handle objections skillfully
9. Watch for closing signals
10. Use a "trial close"
11. Be thorough

Here is the way we boil this subject down in the sales education program of our company:

1. Know your product. Nothing else in selling will take the place of knowing your product.

Know it inside and out, backward and forward.

Know ten times as much about it as you may ever have to tell any one prospect.

Read every line of the manufacturer's sales material—booklets and ads and bulletins—that you can get your hands on.

Talk with factory representatives, and with other salesmen about it. Know about competitive products, too—not to knock them, but because they help you to know more about yours.

And, above all, know what your product will do for your prospect. What it *is*, is of secondary importance to what it *will do*.

Know all you can, too, about the company behind your product,—its history, its standing, its facilities, its ideals.

Your knowledge of your product will make you feel and talk like an authority. You will be on sure ground. You will have conviction, and your conviction will give your prospect conviction . . . that she ought to buy.

In a recent survey, 300 sales managers voted "knowledge of goods" as the most valuable asset in successful selling.

2. Classify your prospect. Pigeonhole your prospect as early as possible. This may mean you must start off by *asking* things before you start *telling* things. It may mean you'd better listen a while before you start your sales story.

This will save your time later on in the process. In short, you'll save time by not being in too much of a hurry at first.

Size your prospect up for pocket-

Part 3--Principles of Salesmanship

book power, intelligence, family needs, etc. Tell her your name and, if it seems to be all right to do so, learn her name, so you can address her by name when you get going.

If she seems to be wandering through your store in body and mind, help to bring her down to earth by asking, "How may I help you?"

If she shows interest in an electric refrigerator, learn why, if possible. Does she have an old icebox that she hates, or does her present electric refrigerator require too much service, or does she envy that honey of an electric refrigerator which her next door neighbor has just bought?

If she's an "icebox," you can talk more about the primary advantages of electric refrigeration.

If she has an old electric refrigerator, you can stress the new features on the new ones, and the freedom from breakdowns and service requirements. The size of her family will tell you the size of the refrigerator she needs.

If it's radio she wants, learn for *what purpose*. A main radio for the living room, or a small radio for the bedroom or kitchen? Is the prospect interested in playing recorded music, or in picking up foreign stations, short waves, or what?

Learn where she lives. The neighborhood will tip you off as to her purchasing power. An inquiry as to her husband's occupation may do the same. Get your bearings before you take off.

Heading the list of essential rules which the salesman must observe to close sales consistently are: know your product, classify your prospect; and get your prospect to participate. With this accomplished, the salesman has a good start toward the closing. The other essential points emphasized in sales training courses are: learn to listen; stick to your subject; make sure the prospect understands; encourage agreement; handle objections skillfully; watch for "closing" signals; use a trial close; and be thorough.

3. Get your prospect to participate. One of the best ways to sell is not to sell at all, but to help your prospect to do her own selling.

Don't make her think you're selling. Make her feel she's buying. The surest way to get your prospect to selling herself is to get her to participate from time to time in the demonstration. Get her to get the "feel" of the product.

Hearing is one of the weakest of the senses. Psychologists say we remember only about 10% of what we *hear*. But we remember 50% of what we *see*, and 90% of what we *do*.

So, get your prospect to perform as you sell. Get her, for example, to *feel* the satinlike finish of the refrigerator you are showing her. Get her to try the easy action of the door latch, and sense how silently and solidly the door closes. Get her to see how easy it is to reach to the farthest corners of the food compartment. Let her turn the cold control. Let her try the door of the freezing chest and feel the cold in the freezing chest. Let her try the various shelf arrangements, and slide the crisper in and out. Let her see for herself how easily the vegetable storage bin opens and closes.

Pretty soon, she's owning that refrgierator in her own mind, with a minimum of selling on your part. She imagines herself in the role of operating this refrigerator in her own home. *Her* actions will sell louder than your words.

4. Learn to listen. Many a salesman has talked himself out of a sale. Selling is no job for a bulldozer. It is a delicate and sensitive process, for half its success is in feeling the reaction of your prospect as you proceed.

You can often "listen yourself" to a quick sale if you are smart enough to keep still at the right time.

There's an old story about a sales manager who called on a prospect the regular territory salesman had failed to sell in spite of many calls. The prospect, after a short conservation, signed a good-sized order, "You know," he said, "I've wanted to give this order to your regular salesman many times, but I always hated to interrupt him!"

Let your prospect participate in the sale not only by acting, but also by *doing some of the talking*. A good reason for letting the prospect talk is that it reveals what will interest her most. If she doesn't talk, encourage her to talk.

Maybe she is thinking of an oven arrangement she prefers in another range. If you know this, you can better sell her yours.

Even when your prospect gets off the subject and wants to gab, let her finish. It will make her feel more at home. Then get her back on the track.

Get your prospect on your team by letting her carry the ball part of the time.

5. Stick to your subject. Keep your trolley on. You're out to get a name on a dotted line, so don't waste time on sidetracks or detours.

If your prospect wants to ramble, be patient, but get her back to the main line as quickly and gently and adroitly as possible.

Perhaps you and your prospect are both sports fans, but a discussion of next week's big game will never get you a signed order. That comes only from "sticking to your subject."

6. Make sure the prospect understands. Ask questions as you go along —not only to get "audience participation," but also to make sure that the prospect is taking in and understanding what you are saying. You may use phrases that are familiar to you, but which are Greek to her.

Futhermore, you may say things that she doesn't even hear the first time because she is thinking of something else or maybe just not thinking.

"Moist-cold storage" may not mean a thing to the customer, but if you show her photos of food which has had the moisture reduced by conventional refrigerator without crispers, she'll understand.

The chemistry of the finish on the bottom of the food cabinet of a refrigerator won't excite her, but she'll understand if you tell her that ordinary acids from spilled foods won't injure or discolor the bottom of the food department.

Talk in *her* terms, and check and recheck frequently to make sure she understands.

If you suggest $25 additional for a larger model, reduce the $25 to two or three cents per day in terms of installment payments.

Many people are bad listeners, bad understanders. Check now and then to make sure what you have said *penetrated*.

7. Encourage agreement. As you are working on a sale, the one thing at which you're aiming is a large "Yes"–which means a signed order. It is good psychology to pile up a lot of smaller "yeses" as you go along, if possible.

Check with your prospect to see if she agrees with you as you progress. You can sense this, and you can even ask, "Do you like that?" when you have pointed out a feature of your product.

When a mason builds a wall, he uses a level and plumb line constantly to see that each brick is in line. Well, a sale is something that you build, and it pays to check frequently to see how you're doing.

Every small "yes" makes the big final "YES" easier to get. And, if you aren't getting "yeses" as you go along, it will tell you where to put more emphasis in your sales effort. You can strengthen the weak or wobbly parts of your wall.

8. Handle objections skillfully. Every prospective customer has at least one big objection which you must overcome before you can make the sale. If this weren't true, there'd be no need for you as a salesman.

Perhaps in the routine unreeling of your sales story, you'll say something that cures her objection. Or maybe you'll have to hunt for it like a needle in a haystack.

Don't resent objections. Search for them—look for them—uncover them. They will serve as signals to show you which way to go.

There are three methods open to you for effective handling of objections: (a) ask why; (b) discuss—don't argue; and (c) use the "Yes-but" technique.

(A) Ask why. You can't do much about an objection that is general—so try in a nice way to get your prospect to get specific.

If you can get her to tell you the "why" of her objection, you can move in with the product information necessary to dispel her doubts.

Asking "why" also enables you to eliminate excuses which aren't objections at all. Sometimes a salesman may report on a prospect: "Not interested." A truer report might be that the salesman was "not interesting." Or maybe the salesman is "not interested" enough to get to the bottom of things.

If the prospect says she cannot afford an electric refrigerator, it's a signal for the salesman to get darned interesting on the subject of the economy of the product–to spill the arithmetic he has up his sleeve on savings through food preservation and quality purchasing.

(B) Discuss things – don't argue. Which would you rather do—win an argument or make a sale?

As a rule, nearly every argument that comes up in a sales contact is in relation to some feature of a competitive product, and is based on the

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Fight for Free Enterprise Urged by S.E.E. Speakers

A CHALLENGE to "unsheathe your sword and enter the conflict" to preserve the system of free enterprise was extended to light and power company executives of the Southeast at the 14th annual conference of the Southeastern Electric Exchange, in St. Petersburg, Florida, April 3-5. The three-day program featured talks by leaders in the electrical industry, a prominent economist, and experts from other industries.

The conference was welcomed to St. Petersburg by the Honorable George S. Patterson, mayor of the city. A former utility executive himself, Mr. Patterson urged the light and power companies to fight any trends toward socialism in the guise of governmental power projects and other divergencies from our traditional free enterprise system.

A report was heard from L. V. Sutton, chairman of the constitutional amendment committee appointed a year ago. The conference adopted a change in the constitution which permitted the election of the Board of Directors of a representative from each member company.

President Wood reviewed the activity and accomplishments of the Exchange during the past year. He announced that arrangements had been made to continue the special research on heat pumps. Speaking of the future, he pointed out that, regardless of other events, light and power companies would be materially affected by atomic power and world peace.

He warned that the change in political sentiment away from the so-called "New Deal" should not lure industry executives into a false sense of security. The threat of bureaucracy is not removed but the industry's opportunity to defend itself against the threat of "public power" is vastly improved.

The future prospect's of the industry are especially bright, Mr. Wood reported. The opportunity for load growth and accompanying reduction in unit cost will proceed rapidly as production capacity of the light and power companies is expanded.

The conference was next addressed by Grover C. Neff, president of the Edison Electric Institute, and president of the Wisconsin Power and Light Co., Madison, Wis. Mr. Neff commended the southeastern companies on their progressiveness. He pointed out some of the programs undertaken in this area, recently, such as the Home Town Improvement program, rural electrification, heat pump development, joint use of lines for power and telephone, gasification of coal in the ground, etc.

He reviewed the progress made in this country under the free enterprise system and emphasized that further advancement of our living standard and other measures of our progress would depend upon continued development and expansion of industry to provide new jobs and income.

The greatest threat to the free enterprise system comes from government itself. A hopeful aspect, he pointed out, is that recent polls have shown a change in the attitude of the public in favor of business-managed companies. This was brought about, he believes, by the contributions of free enterprise in winning the war and as a result of unpleasant experiences with government controls during the war.

As an example of the trend, he gave the comparative results of polls conducted in 1936 and 1946. The question was "Do you favor Federal Government ownership of banks, railroads, coal mines, or electric light and power services? The percentage favoring government ownership of banks in 1936 was 36% as compared to

(Left) Left to right, W. E. Mitchell, former president of Georgia Power Company, Atlanta; Ashton B. Collins, creater of Reddy Kilowatt, New York City; L. V. Sutton, president, Carolina Power and Light Company, Raleigh. (Right) Left to right, C. C. Curtis, president, Savannah Light and Power Company, Savannah; Ward Delaney, president, Institute of Textile Technology, Charlottesville, Va.; Thomas W. Martin, president, Alabama Power Company, Birmingham; and Dr. Howard R. Bowen, economist, Irving Trust Company, New York City.

(Left) Frank J. Gannon, president of Tampa Electric Company, Tampa; and A. W. Higgins, president of Florida Power Corporation, St. Petersburg. (Center) Left to right, Wade Burleson, Ohio Brass Company; Jess Adkins, secretary, Shook and Fletcher Supply Company; and H. Dave Keresey, president of Anaconda Wire and Cable Company. (Right) Left to right, Robert H. Fite, vice-president, Florida Power and Light Company, Miami; and Ed R. Dunning, vice-president, N. W. Ayer & Sons Inc., New York City.

only 26% in 1946. The corresponding figures for government ownership of railroads was 30% and 26%; for coal mines, they were 27% and 33%. Those favoring Federal government ownership of electric light and power companies totaled 40% in 1936 but only 28% in 1946.

Public Relations Improved

Mr. Neff hastened to point out, however, that while only 28% favored Federal government ownership, some 48% favored ownership by Federal government, state governments, municipalities, or co-operatives. In spite of this, private companies have made good showings in municipal ownership elections in recent years. In 111 such elections held in 1933, 2,000,000 people out of 5,000,000 voted for municipal ownership. In 104 such elections in 1940, only 250,000 people voted for municipal ownership as compared with 1,000,000 voting against it. In 1946, 70 such elections were held with only 35,000 voting for municipal ownership and 465,000 voting against it.

Mr. Neff pointed out that the memory of the public is short. The "public" is a "passing parade" and to continue and increase the trend against governmental operation of light and power companies, the story of accomplishment under business-managed light and power companies must be told over and over again.

Outlook for light and power companies indicates that load growth for the next few years appears to be greater than the prospects for additional installed capacity. Margin of capacity over load at end of 1946 was only half of what it was in the previous years. In some localities the margin has been drastically reduced.

The big job of farm electrification is nearing completion, and by 1948 the great majority of all farms will have electricity available. A great opportunity will then exist to increase the average farm usage of electricity.

He recommended that companies continue to work to increase the trend toward better public relations, to develop rural electrification and greater use of service, and to develop advantages of interconnection in order to better distribute available power during periods of decreasing margin between capacity and load.

Following Mr. Neff's address, it was proposed by Thomas W. Martin that a committee of qualified engineers be appointed to study operations of interconnections in the southeast with a view of utilizing existing capacity to the best advantage during the period of dangerously low margins between capacity and load. The proposal was adopted by the conference.

"The Clark's Hill Project on Savannah River" was the subject of an address by Charles A. Collier, vice-president of Georgia Power Company and vice-president of Savannah River Electric Co.

He reviewed the history of this project and the company's recent plans for completing it, and described in considerable detail the events that led to the Federal Power Commission's recent denial to the company of a permit to complete the project. He discussed the various factors that entered into the commission's decision and indicated that the only real reason for the denial of the permit was the apparent effort of some persons in the government to continue the development of public power projects.

Mr. Collier said that the company will continue its efforts to obtain a permit to complete the project. The company will fight the condemnation proceedings on the basis that even the U. S. Engineer's own figures, flood control and navigation represent only 3 per cent of the total cost of the project with power production accounting for the balance of 97 per cent, and Georgia law does not recognize condemnation of land for power projects. Actually, Mr. Collier said, the allocation of total cost to flood control and navigation should be only about .3 of 1 per cent. Pointing out that the completion of this project by the U. S. Engineers rather than by private industry would lead to the completion of numerous other such "public power" projects in the South, Mr. Collier urged the power company executives to alert themselves to this possibility.

What the Public Expects

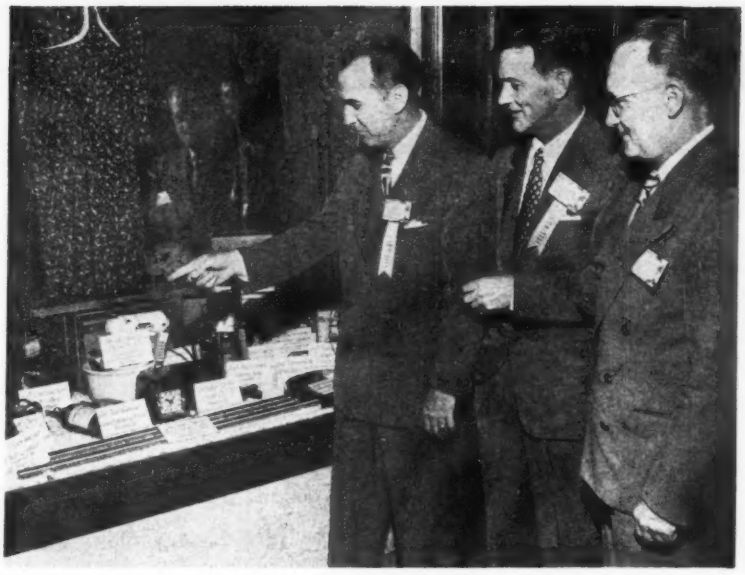
Mr. Collier was followed on the program by Thomas W. Martin, president of Alabama Power Company, who talked to the conference on the "Economic Outlook." In an inspirational address that dealt more with the underlying philosophies of the industry rather than its statistics, Mr. Martin recalled to memory the names and accomplishments of the pioneers who established the first power companies in the South and those who followed them. He expressed the thought that the public expects more of a company than efficient electric service—they have come to expect an interest on the part of the company in everything that concerns the progress of the community.

In discussing the "Pattern for Good Labor Relations," Lee Hill, editor and publisher of *Electrical World*, dif-

ferentiated between "labor" relations and "employee" relations. Labor relations represents relations with union organizations, while employee relations embraces relation with employees as individuals. Managers very often conclude erroneously when the union enters the picture that the need for good employee relations is less essential. American industry has not displayed the same talent in handling employee relations that it has in connection with production and finance. If industry spent as much time, or substantially as much time, on employee relations as it has on production the story might be vastly different, Mr. Hill said.

When employee relations are not satisfactory, four reasons are generally given as the cause: (1) union is not co-operative; (2) union fights management; (3) policy of national administration; and (4) the critical times in which we live. Mr. Hill offered the following procedure which could be followed advantageously: uphold the dignity of every individual—that is, apply the same principle to everyone in the organization. To do this, (1) examine the hiring procedure—consider attitude of the employee toward supervision as well as his skill qualification; (2) determine proper placement of workers—lack of provision for advancement will result in low morale and generally unsatisfactory employee relations; (3) establish adequate salary structure—taking relative salaries into account; (4) provide intelligent training of supervisors; and (5) set up plan for "auditing" employee relations by learning employee attitudes through polls, "exit" interviews, etc., and supervisory reports.

In conclusion, Mr. Hill pointed out that the key to better "labor" relations is more attention and effort directed to "employee" relations.



J. S. Gracy, personnel manager, Florida Power Corporation, St. Petersburg, points out some of the attractive prizes that awaited the winners at golf and bridge to D. S. Kerr, southern district manager, Allis-Chalmers Company, Atlanta, and H. E. West, southern district manager, Anaconda Wire and Copper Company, Atlanta.

In the absence of Frank A. Wilkes, president of Southwestern Gas and Electric Co., Shreveport, who was to have addressed the conference on "Public Power in Southwest," his paper was presented by J. Robert Welsh, of the same company. Mr. Wilkes credited the government's entry into the "public power" field to the efforts of a small group of men in governmental agencies whose objectives are admittedly the socialization of the electric industry, and eventually all industry, in this country. He effectively traced changes in policy toward power projects in certain governmental agencies to the entry into those agencies of individuals known to favor socialism of the electrical industry.

After tracing in detail the development of the Southwestern Power Administration and its efforts to duplicate electrical transmission facilities

(Continued on page 98)

(Left) Left to right, S. C. McMeekin, president of South Carolina Electric and Gas Company, Columbia, and W. C. Cram, Jr., sales promotion manager of War Assets Administration, examine the transformer which was given away as an attendance prize at the last session of the Exchange Conference. L. V. Sutton, president of Carolina Power and Light Company, won the transformer. (Center) Left to right, P. K. Smith, Westinghouse dealer of St. Petersburg, and W. B. Creech, of Westinghouse Electric Corporation, Atlanta, look over one of the special editions of the Times devoted to the conference. (Right) Left to right, are H. M. Peabody, Aluminum Co. of America, Atlanta, and George A. Grimm, director of operating department of Florida Power Corporation, St. Petersburg.

Problems and Programs Reviewed By Oklahoma Utility Men

So - CALLED CHEAP hydro - electric power is only a minor factor among the reasons why new industries choose their locations, W. H. Stueve, chief power consultant, Oklahoma Gas & Electric Co., Oklahoma City, declared in a talk, backed by official surveys, which he delivered before the 29th annual convention of the Oklahoma Utilities Association, at Tulsa, Okla., March 21.

Utilizing illuminated charts, projected on a screen, Mr. Stueve showed that out of 484 reasons why 73 industries chose their locations, electric power was least important, representing only 4 per cent of them.

What Attracts Industry

Nearly half of the reasons, which were revealed in a national survey, related to railroads and distribution facilities. Among other reasons given in industries for choosing their locations, in order of their importance, were: favorable showings in taxes and legislative trends, labor and living conditions, fuel supply, water, and electricity.

The speaker showed by illuminated slides that present density of power lines in the states of Arkansas, Texas, Oklahoma, and Louisiana is about the same as in the states having the principal manufacturing centers. Density of railroads and highways is also about the same. These four states also have reserves of natural gas expected to last from 40 to 50 years. They only need to know and present the facts to have an even break or an advantage over the big manufacturing states in securing the location of new industries.

Mr. Stueve proved the misleading nature of claims of the advocates of government-owned and operated power dams, that power shortages would exist in the Southwest during the war, and that so-called cheap hydro-electric power would attract new industries to this region.

In 1940 the four southwestern states of Oklahoma, Arkansas, Texas, and Louisiana only required utilization of 42 per cent of the installed capacity of steam plants. In 1945, after five years of war the same states required only 62 per cent of the installed steam capacity. By 1950 if all the dams now planned by the Southwest Power Administration are built, these dams can only supply 7 per cent of the electricity required by spending $140 million dollars. And yet, Mr. Stueve pointed out, the SPA wants to add 600,000 kilowatts in steam plants and power lines to duplicate present public utility systems bringing the total cost up to $200 million dollars.

If this is all done, the combined steam and hydro-electric government-generated electricity will cost 4 mills per kilowatt-hour at the dams or about 5 mills per kilowatt-hour at the factory site, whereas the privately-owned public utilities can generate their steam power for 3.6 mills per kilowatt-hour and sell it at a price which would be competitive with hydro-electric power, the speaker asserted.

A survey of 20 broad types of industries show that 62 per cent of them buy all the power they need while 38 per cent of them own their own generating plants. Mr. Stueve said that the average cost of all purchased power in Oklahoma is 9½ mills per kilowatt-hour, while the average cost of all purchased power in the United States is 10½ mills.

Several speakers laid heavy stress on the necessity for public utility executives and employees to come out in the open and defend, in their advertising, before Congress, and in the market places the American protit or free enterprise system.

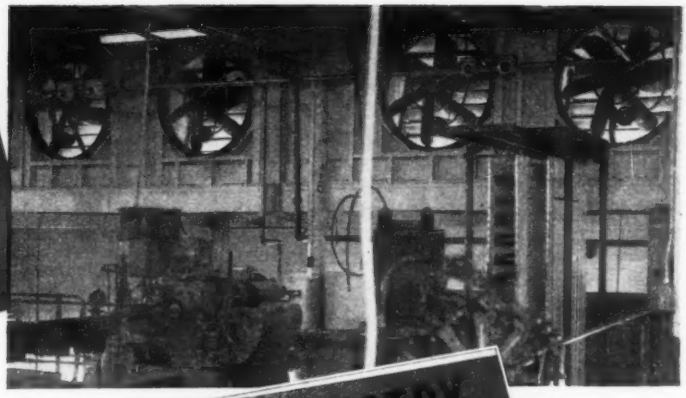
The fact that recent elections showed a trend of the public away from new deal and radical views, that there are indications that communism is aggressively expanding in Europe and Asia, and that the forces of national socialism and government ownership are still aggressive in America, seeking to make the public utilities their first shining mark, force home the necessity for renewed efforts by the utility industry, and all other business, to combat all forces which oppose the economic and political system that has made America great. These facts were pressed home to the delegates by most of the speakers, particularly by Will C. Grant, advertising director, Lone Star Gas Co., Dallas, Texas; John Rogers, Tulsa attorney; and Jeff H. Williams, Chickasha, convention dinner speaker.

Some of the electric and gas utilities of the country are adopting progressive methods to sell the value of their services and merchandise by setting up "live" appliance displays in their lobbies where their customers come to pay their bill, Davis M. DeBard, vice-president, Stone and Webster Service Corporation, New York City, told the convention.

Illustrating his remarks with colored

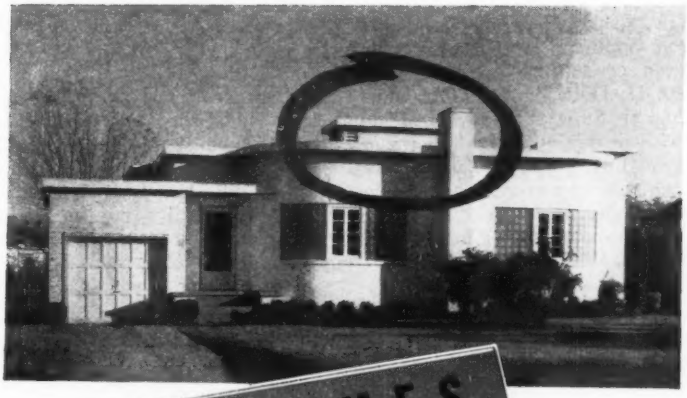
Some of the officers of the Oklahoma Utilities Association, shown here from left to right, are S. I. McElhoes, Chickasha, president; Miss Kate A. Niblack, Oklahoma City, secretary; L. A. Farmer, Ponca City, first vice-president; and W. R. Thomas, Ada, director.

Sell BREEZES



for INDUSTRY

ATTIC FANS



for HOMES

WINDOW FANS

Sell cooling, natural breezes for factories, schools, apartments, and homes—sell BAR-BROOK BREEZEBUILDER* Attic Fans and BAR-BROOK WINDO-WIND* Window Fans. Easily adapted to any industrial building or homes of any type. Simple package units, easy to sell because of a decade of consumer acceptance. Write for full information today!

BAR-BROOK FANS

*Trade Mark

BAR-BROOK WINDO-WIND

BAR-BROOK MFG. CO., INC.
(Formerly Shreveport Engineering Company)
1553 Texas Avenue....Shreveport, La., U. S. A.

BAR-BROOK BREEZEBUILDER

illuminated slides, the speaker said that 75 per cent of the 30,000,000 domestic customers of electric utilities and the 20,000,000 domestic customers of gas utilities come into the offices of the companies each month to pay their bills.

"This presents a golden opportunity to dress up your offices so that your customers may see appliances set up in attractive homelike surroundings, connected to your service where they can actually smell food cooking," Mr. DeBard said. "All these appliances should be connected up in roomlike spaces having three walls and a ceiling and should be actually working. This would give utility executives and employees chances to meet their customers, and correct some of the false ideas about public utilities and sell the importance of the services."

"Measured by value of products sold in the past 25 years, Oklahoma is more important as a mineral state than an agricultural one," asserted Robert H. Dott, director, Oklahoma Geological Survey. "However I do not wish to minimize the importance of agriculture. Census figures show that agricultural workers made up the largest single employment group in the state—about 30 per cent of the total. The high-ranking manufacturing states are also those with the greatest agricultural income per square mile. New Jersey is first and Connecticut second in agricultural income and these states are second and fourth, respectively, in value added by manufacturing."

Several of the speakers featured at the 29th annual meeting of the Association are shown here. From left to right, they are: Robert H. Dott, director, Oklahoma Geological Survey, who is showing Steve Stahl, Oklahoma Expenditure Council, a piece of light building material manufactured from Oklahoma minerals. Next is D. W. Reeves, of Tulsa, chairman of the Association's Gas Division, and W. H. Stueve, Oklahoma Gas and Electric Co., Oklahoma City.

The greatest hope for Oklahoma farmers and the only way to stem the tide of population loss is in the establishment of many more manufacturing plants, Mr. Dott asserted. He discussed how minerals can be utilized to increase consumption of electric power and natural gas. "Oklahoma is rich in industrial minerals," he proceeded, "which in processing require electric power in greater or less degree. These include glass sand, limestone, dolomite, gypsum, volcanic ash, salts and brines, as well as petroleum, natural gas, liquefied petroleum gases and coal."

Percentages of expenses of electrical energy relating to total operating expenses were given by the speaker as follows in connection with the processing of the following industrial minerals: gypsum products, 5.08; flat glass, 2.33; glass containers, 2.33; mineral wool, 2.57; lime, 5.63; cement, 8.92; clay products, except tableware, etc., from 1.65 to 4.84.

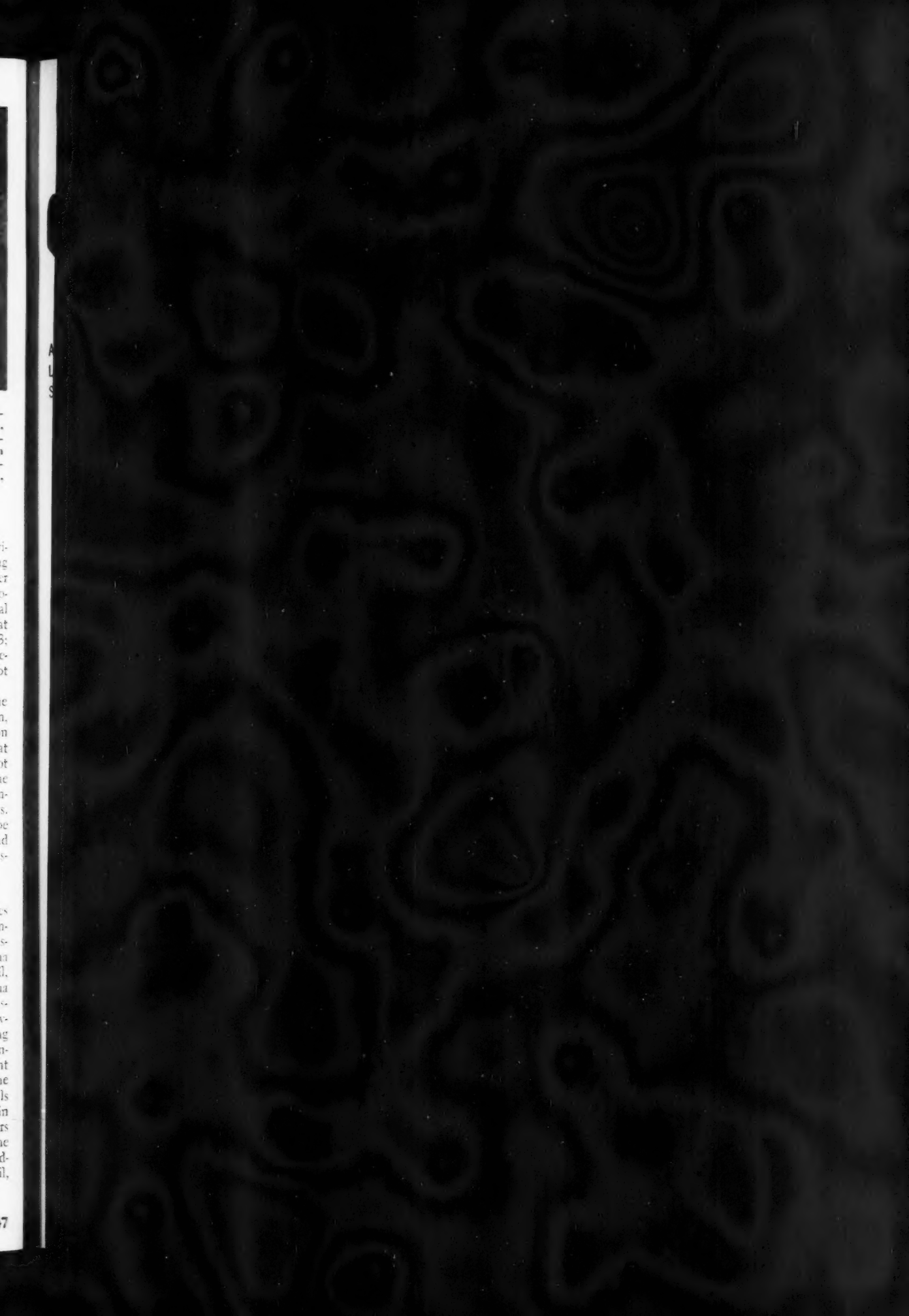
In presenting the subject, "The Lights are Green," L. A. Crittenton, speakers staff, National Association of Foremen, Chicago, Ill., said that five million man-years, that have not been a factor in production in the United States, are locked up in employees of industrial establishments. These vast reserve powers can be brought out by proper supervision and employee training, the speaker asserted.

The Expenditure Council

Steve Stahl outlined the objectives of the Oklahoma Expenditure Council, of which he is executive vice-president, with headquarters in Oklahoma City. Chief objectives of the council, organized at Tulsa and Oklahoma City about a year ago, include: ascertaining the facts about taxes, government and expenditures; making these facts available; promoting keener interest in affairs of government and more complete fulfilment of the functions of government by officials and other citizens; and working in co-operation with all public officers to secure efficient government at the lowest possible cost. As one outstanding accomplishment of the council,

(Continued on page 58)

Left to right, W. D. Knight, Southwestern Public Service Co., Amarillo, Texas; C. N. Robinson, Public Service Co. of Oklahoma, Tulsa; and chairman of the Association's Electric Light and Power Division; J. A. Federhen, Oklahoma Gas and Electric Co., Oklahoma City; and Glenn Coleman, Public Service Co. of Oklahoma, Tulsa.



A PHENOMENAL NEW DEVELOPMENT IN DESK LIGHTING!

All-metal Construction
Luxurious Bronze Finish
Shatterproof POLAROID Filter

MODEL NO. 1010
Uses two 15-watt fluorescent lamps
For A. C. operation only

Absolutely Glare-Free 100% Useful Light!

THE AMAZING NEW

MITCHELL

POLAROID* FLUORESCENT DESK ILLUMINATOR

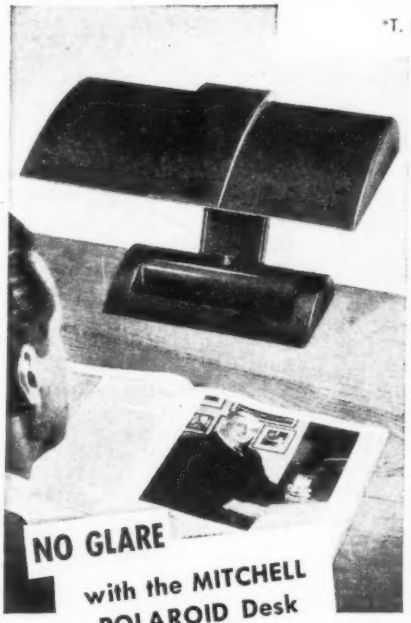
*T. M. Reg. U. S. Pat. Off.

A DRAMATIC LIGHTING STORY TO TELL!
A DRAMATIC LIGHTING PRODUCT TO SELL!

Here is a new, spectacular form of desk lighting that sells on SIGHT—because it delivers a new kind of *seeing* light! The POLAROID Desk Illuminator, made exclusively by MITCHELL, combines for the first time the use of fluorescent lighting with dramatic POLAROID glare-eliminating material. The result is a revelation—*the only truly glareless, comfortable, 100% useful light ever made available for desk lighting!*

A simple 2-minute demonstration of this amazing new lighting does a dramatic selling job for you. You can show your customers, before their very eyes, how the concealed POLAROID filter actually TRAPS and ELIMINATES the glare-producing light, delivering only the useful "vertical" rays to the desk surface. Under this glareless, even light, print, pictures and writing stand out plainly, clearly. Colors are enriched. Glare is gone—entirely! Eyes stay clear, unstrained, comfortable through even the longest day's work.

In the POLAROID Desk Illuminator, MITCHELL presents an exclusive combination of perfect desk illumination with magnificent styling—offers you the most dramatic "selling package" in lighting history. Get the full details today!



NO GLARE with the MITCHELL POLAROID Desk Illuminator!

GLARE with ORDINARY Desk Lighting

Just SEE the DIFFERENCE in these actual unretouched photographs!

Made Exclusively By

MITCHELL

FOR ALL WHO READ OR WORK AT DESKS

Executives	Accountants	Doctors	Engineers
Secretaries	Bookkeepers	Lawyers	Draftsmen
Office Clerks	Students	Teachers	Artists, etc.

Mitchell Manufacturing Company
2525 CLYBOURN AVENUE, CHICAGO 14, ILLINOIS
In Canada: Mitchell Manufacturing Company, Ltd., Toronto, Canada
Far West: *Complete Modern Plant and Sales Office at Los Angeles Serves the Entire Pacific Coast Area*
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SELLING PLANS REVIEWED

Difficulty of expanding service facilities has not discouraged utility sales executives. These highlights from the EEI Sales Conference show that promotions will go on.

OPENING the 13th Annual Sales Conference of the Edison Electric Institute, in Chicago, Chairman Ralph P. Wagner told his audience that "We are now on the verge of a buyers' market, where selling will again be a must for every sale.

"We are practically the only industry which can point to decreasing prices for our service during the war and the ensuing period of price inflation. Our sales have increased beyond our expectations, and there is some evidence that our industry has been lulled into an increasing sense of endless prosperity by this lush period.

"While the sale of electrical service may not be a pressing problem of the moment, we may, without clear warning, find ourselves facing a situation where sales are imperatively needed for the financial welfare of our companies," he continued. "The upsurge of the economic cycle started in 1938, and gave clear evidence of its nature. On the contrary, the downtrend will come out of a seemingly clear sky. Sales forces cannot be built overnight. The warning signs of coming changes are even now so sharp that we should be prepared to meet the day when sales will be demanded."

Foreseeing the need for aggressive selling, the Institute prepared a sales training course in 1946, which is now being used by over 200 electric utility companies, Mr. Wagner said. Selling tools will also be provided, he added, one of which will be a national promotional program on Planned Lighting, introduced to the industry at the Sales Conference. (See page 33 of this issue.)

Increasing Industrial Productivity

A FIVE-POINT index of economic health, based upon the relationship between employment, wages, profits, and inventories, was presented to the Sales Conference by John D. Gill, economist and director of the Atlantic Refining Company, of Philadelphia, Pa.

According to him, the chances of achieving maximum industrial productivity, the basis of national security, depend upon favorable answers to these five questions, which he called an "equilibrium index" and which indicate the position of the nation's economy at any given time:

1. Is there full or nearly full employment?
2. Are profits used to provide needed productive capacity?
3. Are inventories normal?
4. Is the standard of living rising or declining?
5. Are large groups receiving benefits denied the rest of the population?

Discussing the fifth question, Mr. Gill charged that "in certain industries, organized labor, by forcing employers to accede to wage increases on top of the highest industrial wage rates, is increasing the gap between these wage earners and those of employers, public and private, who have not had the resources for prompt wage raises, even to match cost-of-living increases. The grave problem thus created is now threatening us."

Labor has little cause for discontent over its share in the growth of productivity, Mr. Gill continued. Between 1909 and 1945, the national income rose $132 billion. Wages and salaries during this interval rose $98 billion, with a corresponding increase in corporate profits of less than $7 billion, he explained. A large part of these profits were plowed back into business, and helped to make possible the increase in wages and salaries, Mr. Gill said.

Since 1900, Mr. Gill pointed out, industrial wages have increased 375 per cent. Individual wage earners enjoy real wages equal to 209 per cent of the 1900 real wages, after allowing for the change in cost of living. Holders of industrial stocks, on the other hand, received a net increase in dividends of only 29 per cent, not even enough to cover the increase in the cost of living, he declared.

The equilibrium index should help to answer the question of when a change in real wages is imperative, Mr. Gill explained. The rate of change of total employment, the speed with which inventories are accumulated, and the gaps between material welfare of the several economic groups should all be considered.

Wage increases should above all be "rational," Mr. Gill urged. They should be based upon conditions in the entire economy, and common to all group wage adjustments throughout the country.

As to the amount involved in wage increases, Mr. Gill declared that "There is no economic reasoning in a bid for a 30 per cent wage increase, nor in an offer of a 5 per cent increase, if a rational wage increase is 15 per cent. Such bids and offers are pulled out of thin air, and are implemented by destructive force."

A country-wide wage increase should be that number of dollars, which when added to existing payrolls, and incomes of other economic groups, will absorb the proven output of national productive capacity under then existing price conditions, Mr. Gill said. When the total wage increase for a specific business has been determined, its allocation can proceed on the basis of secondary collective bargaining betwen employer and employees, he declared.

Maintenance of equilibrium between prices, wages and profits is a tricky question, Mr. Gill said. The industrial price increases of the past eighteen months should benefit the economy, rather than harm it, he stated, if these price increases are a result of change in supply-demand ratios, and if the larger profits they produce are employed to increase productive capacity. This increase in capacity should then operate competitively to cause a price reduction, Mr. Gill forecast.

"However, currently high prices, notably agricultural prices, are a cause for concern, because they have reduced the real incomes of most gainfully employed persons and many others

Engineered to Outperform Ordinary "FANS"

No wonder it OUTSELLS *all others!*

Injector cones compress a great volume of air.

Rubber motor mounts eliminate noise and chatter.

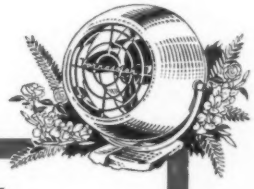
High-pitched blades bite off more air and drive harder.

Vornadofan's many extra features, sensations when first introduced, offer topflight dealers a margin of superiority no ordinary fan can possibly boast. Vornadofans are indeed so superbly better, a demonstration alone is enough to sell the customer.

SATISFIED CUSTOMERS — ENTHUSIASTIC DEALERS

A huge new advertising campaign has just been released. Big copy in color will reach 27,000,000 families on an all-year schedule. No need to waste time meeting sales resistance with inferior merchandise.

Vornadofan is the fastest seller in America. See your distributor at once.



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World's Finest Air Circulators

Guaranteed by Good Housekeeping

The O. A. SUTTON CORPORATION, WICHITA, KANSAS

during the past year," the speaker continued. "Except for this, there has been little reason thus far for anxiety over expanded profits, because they have led only to moderate enlargement of dividends, and have been used in greater volume for creating productive capacity than at any time in our history."

"We have learned many technical ways to increase productivity. We need to learn the economic ways. We have not learned the economic ways to utilize existing productivity as fully and continuously as desired. Learning will require a wholesome consideration for the common good. By that road, national and self-interest may best be served," Mr. Gill concluded.

Heat Pump As A Load Builder

TWENTY-FIVE per cent of the new homes to be built in Indianapolis, valued at $9,000 or more over the next five years, will purchase electric heat pumps for their house heating systems, assuming availability of equipment, it was estimated by A. C. Crandall, vice-president of the Indianapolis Power and Light Company. His forecast, Mr. Crandall cautioned, was based upon two years experimental work with a heat pump installation, and extensive study of his company's area.

Another 10 per cent of the new existing homes in Indianapolis alone will buy heat pumps during the same period, if suitable equipment is on the market, Mr. Crandall said, making a total of 3,480 heat pump installations estimated during the five-year period.

"When we remember that each installation means several thousands of kilowatt-hours used per year, or several times the consumption of all presently used home electric appliances, we can begin to visualize the tremendous effect of the heat pump on the electric utility industry," Mr. Crandall declared.

With an average use of 9,000 kilowatt-hours per home for year-round heating and air conditioning with the electric heat pump, this would mean an annual increase for the Indianapolis company alone of 31,320,000 kilowatt-hours used for heat pump service—a figure equal to 17.4 per cent of the total of his company's residential sales during 1946, Mr. Crandall said, although the estimated 3,480 installations represent only 2½ per cent of the total of residential customers.

These estimates, Mr. Crandall continued, are based upon the assumption that fair supplies of heat pump units will be available within the next twelve to eighteen months, and will be priced not too far above the cost of other types of automatic heating equipment.

Operating costs of the heat pump should not be "a major point of sales resistance," Mr. Crandall said, considering the advantages which the heat pump brings to the home. The cost of electricity for the heat pump installation on his company's lines averaged $14.24 per month, which covered both heating and cooling over a year's period. The amazing efficiency of the heat pump, which in this case returned in heat 3.61 times the value of electric input, is primarily responsible for the low operating cost.

"No other domestic appliance, at a comparable stage in its development, has stirred such a volume of public interest as the heat pump," Mr. Crandall said. "This is understandable because it represents a truly revolutionary means of complete air conditioning in the home."

The public, particularly the new home builder, is eager for heat pump service, and the new home market will probably develop the largest volume of heat pump business, Mr. Crandall stated. Many design, construction and application problems must be solved before the heat pump is ready for marketing in all localities, he reminded his audience.

The heat pump, applied to water heating, will provide hot water at a cost, in many cases, less than that of other water heating methods, Mr. Crandall continued. Nearly every home with a heat pump is confidently expected to use electric appliances for all other household tasks. "The extent of the influence of the heat pump in building utility sales is beyond calculation," he said.

Turning to a detailed analysis of the heat pump installation in Indianapolis, Mr. Crandall said that this unit operated through the heating seasons of 1945-1946 and 1946-1947 in a six-room home. The average temperature was maintained at 74 degrees, despite outside temperatures of as low as 10 degrees below zero, at a cost over the year of $160, or $14.25 per month. Heat was taken from the earth, through buried coils containing a refrigerant, and was delivered through a compressor and fan to the interior of the home.

"The heat pump is worthy of the best efforts of our industry—not only because of its potential new load and revenue, but because of its potential contribution to better living in the homes of our customers," Mr. Crandall concluded.

Inflation or Deflation

PRICES of electrical appliances as a whole should settle at a level considerably above the prewar range, the Sales Conference was told by Dr. Paul L. Morrison, chairman of the Department of Finance of the Northwestern University School of Commerce.

Within the near future, moderate price readjustments are to be expected in certain appliance items, Dr. Morrison said. Prices of some specific appliances have risen faster than prices in general, due to supply shortages, which are now being rapidly remedied by "our powerful productive machine," and as the shortages disappear, price reductions in these lines should follow.

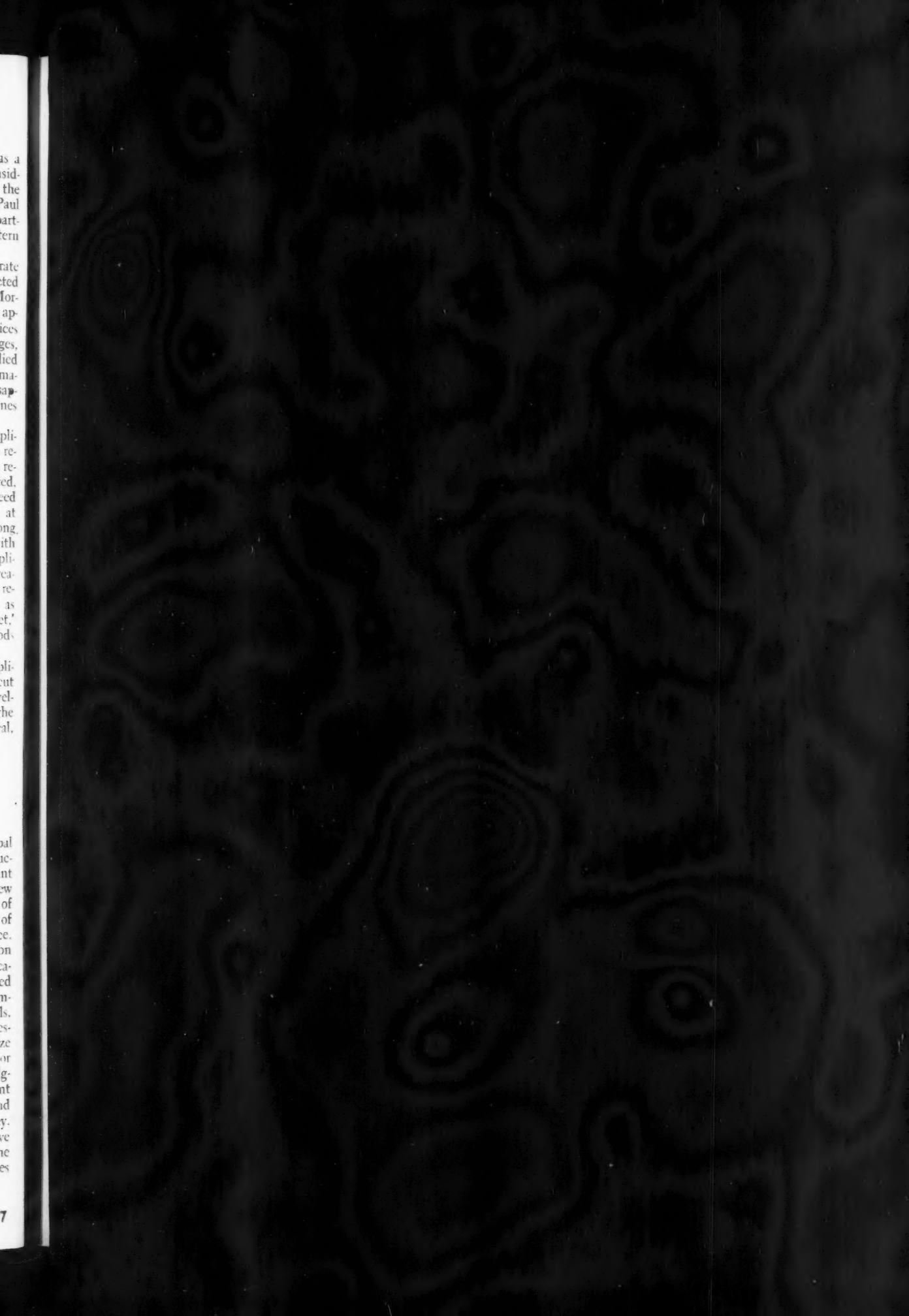
Urging his audience to hold appliance inventories to their minimum requirements until the coming price readjustments have been completed, Dr. Morrison emphasized the need for caution in building inventories at the present time. Although the long period of shortages, combined with the large pent-up demand for appliances, makes it hard to gauge a 'reasonable' inventory, the economist reminded his listeners that "As soon as buyers are 'priced out of the market,' purchases of durable consumers' goods are the first to be postponed."

Many new and unseasoned appliance dealers may be expected to cut prices when a buyers' market develops, Dr. Morrison warned, but the effects in his opinion will be local, rather than on a national scale.

The Farm Market—How to Reach It

ELECTRIFICATION is the principal factor in the increase of farm production per agricultural worker to a point more than double that of only a few years ago, Paul E. Miller, director of Agricultural Extension, University of Minnesota, told the Sales Conference.

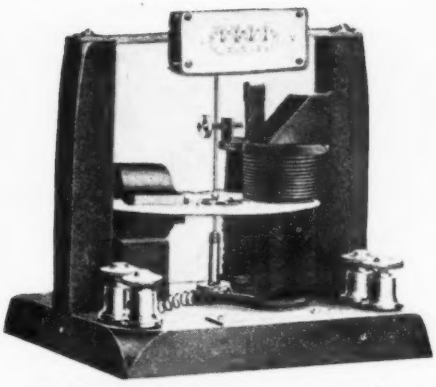
The advance in the mechanization of American farms and the application of science to farming is matched by the change in the attitude of farmers towards new ideas and methods, Mr. Miller said. "The more progressive farmers have begun to visualize the almost unlimited possibilities for using electricity to eliminate drudgery, shorten hours of labor, prevent losses of perishable commodities, and increase over-all farming efficiency. In general, however, farmers still have a long way to go in understanding the opportunities which electricity makes available."



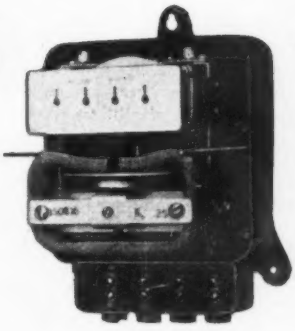
Milestones in

METER PROGRESS

TYPE E 1908-1940
TYPICAL OF ALL METERS
1902-1912

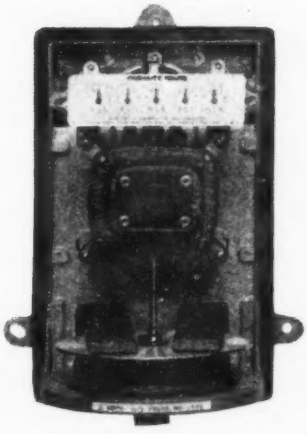


FIRST EXPERIMENTAL AC WATTHOUR
METER BUILT BY MR. DUNCAN
1892

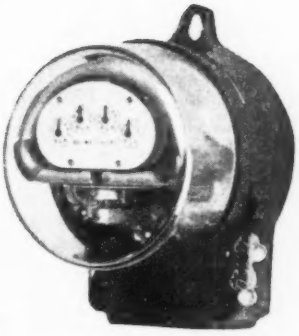


TYPE M AND MI
1913-1914

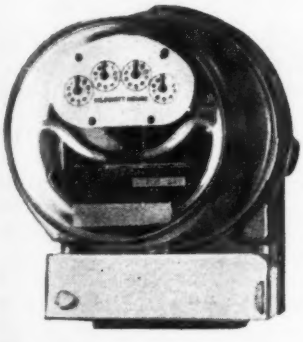
TYPE M2
1915-1926



FIRST TYPE OF METER BUILT AT
DUNCAN FACTORY, LAFAYETTE, IND.
TYPE A 1902



TYPE MD
1927-1933



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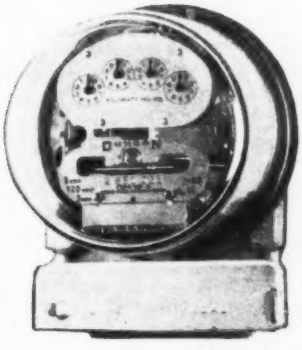
1934-1937



TYPE MF ALNICO MAGNET
1938-—

DUNCAN ELECTRIC MFG. CO.

Lafayette Indiana

Makers of Watthour Meters Since 1902

DUNCAN

In the average corn belt or dairy state, farmers spend more than one-half their working hours on chores and care of livestock, the speaker continued. Electric power makes possible a substantial reduction in the time required for these tasks, thus helping farmers to increase production and making possible a higher standard of living on the farm, Mr. Miller said.

Labor saving electrical equipment has a tremendous appeal to the farmer in these days of labor scarcity and high wages, Mr. Miller continued. The farmers' demand for equipment is increasing, and they have ample resources with which to buy.

"Bright as is the picture, it is by no means a sellers' market," he warned. "No group of people are more price conscious than farmers, when they can wait, if necessary, for more favorable conditions under which to make desirable improvements."

Farmers are utility conscious, too, Mr. Miller declared. They want to have facts about the equipment in which they are interested. They want to know how much time it will save, how its price can be amortized in reduced production costs, how it will increase the value of farm products, and especially, what is its ability to withstand hard wear.

"This calls for intensive work on the part of the manufacturer to test his product thoroughly before putting it on the market," Mr. Miller explained. It is also essential that the dealer understand the farmer's problems, as well as the characteristics of the equipment he sells. "Dealers who can furnish intelligent, honest and quick repair service at reasonable cost will have a special appeal to farmers, who as a class fully appreciate the need for service in machine operation," Mr. Miller pointed out.

Research to determine new and profitable uses of electric energy for various farm tasks is needed. According to Mr. Miller, information is needed along the following lines:

1. How electricity can best be fitted into individual farm operations—how maximum returns can be realized on the investment.

2. What kind, type, and size of equipment will best meet the requirements of each farm job.

3. How the equipment should be operated for best results.

4. How the equipment should be maintained and serviced for maximum use.

In the event of a fall in farm prices, the farmer will pay increased attention to the lowering of production costs, Mr. Miller said. As the differential between costs and prices narrows, there will be a premium on farming efficiency, he explained. "It can be expected that the intelligent use of electrical energy applied to farm operations will reduce costs, and actually make more urgent the installation of electrically operated equipment, providing that equipment is well-chosen and productive," he declared.

"Electricity promises to be the last step in wiping out those primitive conditions that have long been associated with rural living, and making possible a modern home on the farm. Once we have these things, farmers will never give them up, any more than they would give up the tractor or automobile. They will be a permanent part of rural life, and will set a new standard of living in rural America," Mr. Miller concluded.

Building the Electrical Market

"If American industry is sincere in wanting the minimum of government interference in the operations of our economy, then industry must assume the responsibility of providing the sales that will insure reasonably full employment," Don G. Mitchell, president of Sylvania Electric Products, Inc., told the closing session of the Sales Conference.

This employment, Mr. Mitchell continued, must be at wages that will bring an increasing standard of living, and at the same time, service our national debt. "Assuming there are no further serious cost dislocations, lower prices, that include a reasonable return, should also be possible in the long pull, through the medium of volume sales and production. If everybody in the market will work to that end, I am confident that we shall attain our objective, and that it will not be a profitless prosperity," he declared.

"Never before has sales had such a responsibility placed upon it . . . It can be done, but it will need new marketing tools and new sales management concepts. One approach to sales budgeting must be on the basis, not of how little, but how much can we afford to spend to get the desired volume. This approach will produce larger results faster than a program of economy, and in the long run will be more beneficial to the investor," Mr. Mitchell explained.

"If you are to preserve free enterprise in utility operation, neither you nor your managements can ever afford to become complacent and satisfied with your sales results," Mr. Mitchell said. Pointing out that one reason advanced in support of nationalization of the electric utilities in France and England was the necessity for developing the electrical market beyond what private ownership apparently had been able to do, he declared that "Constant evidence that you are encouraging the use of electricity in every way will help to convince the public that you are contributing to the welfare of the communities you serve."

The latest public opinion polls show that the American public "is less inclined to want government ownership of electric utilities than it has for a long time. The situation today is much more healthy with respect to your business than it has been for several years, and it can continue to improve under inspired sales direction," Mr. Mitchell continued.

Price levels in the consumer goods markets are too high to bring the volume of sales necessary for producers to maintain full employment, Mr. Mitchell said. "Wholesalers and dealers who bought all they could lay their hands on, regardless of price, quality and reputation, are going to have trouble. Some have already failed. Some manufacturers who but a few months ago were working day and night to get out the orders are now laying off men."

"The faster our sales programs get moving, the sooner will we be over this period of adjustment, and in the period of prosperity. In the hands of those who are entrusted with marketing has been placed the economic welfare of our employees, our companies and our country," Mr. Mitchell concluded.

Oklahoma Utility Association Meets

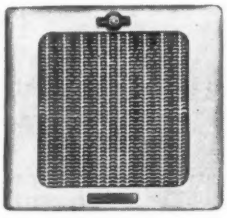
(*Continued from page 52*)

Mr. Stahl pointed to passage of a law in 1947 Oklahoma legislature reducing the state income tax on individuals and corporations by one-third.

During the two-day convention, March 20-21, held at the Hotel Tulsa, the Gas and Electric Light & Power Divisions of the association elected their chairmen. C. N. Robinson, Public Service Company of Oklahoma, Tulsa, heads the Electric Light & Power Division, succeeding Malcolm Morrison of the Oklahoma Gas & Electric Co., Oklahoma City. D. W. Reeves, Oklahoma Natural Gas Co., Tulsa, heads the Gas Division, succeeding L. A. Farmer, of Ponca City. S. I. McElhoes, of Chickasha, Public Service Company of Oklahoma, president of the association, presided at the meetings.

Model PJ-13 Portable Room Heater. 110 volts A.C.; 1320 watts; 4507 BTU. 13" high, 13½" wide, 7" deep.

Only ELECTROMODE HAS THE SAFETY-GRID!

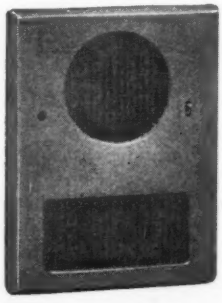


Model WJ-13 Bilt-in-Wall Small-Room Heater. 110 volts A.C.; 1320 watts; 4507 BTU. Approximate wall opening required: 9⅝"x11⅛".

THIS newest idea in home heating is a real money-maker for many a contractor, wholesaler and dealer! Here is something no other heater can offer—all-electric operation *plus* absolute safety thanks to Electromode's exclusive Safety-Grid Heating Element (see X-ray View above). It has no exposed hot or glowing wires, no danger of fire, shock or burn.

Electromode All-Electric Room Heaters are demonstrating daily, the many profit possibilities of handling a quality product built to give service-free operation throughout long periods of use. Sell Electromode and you sell complete heating satisfaction.

ELECTROMODE CORPORATION • 45 Crouch Street • Rochester 3, N. Y.



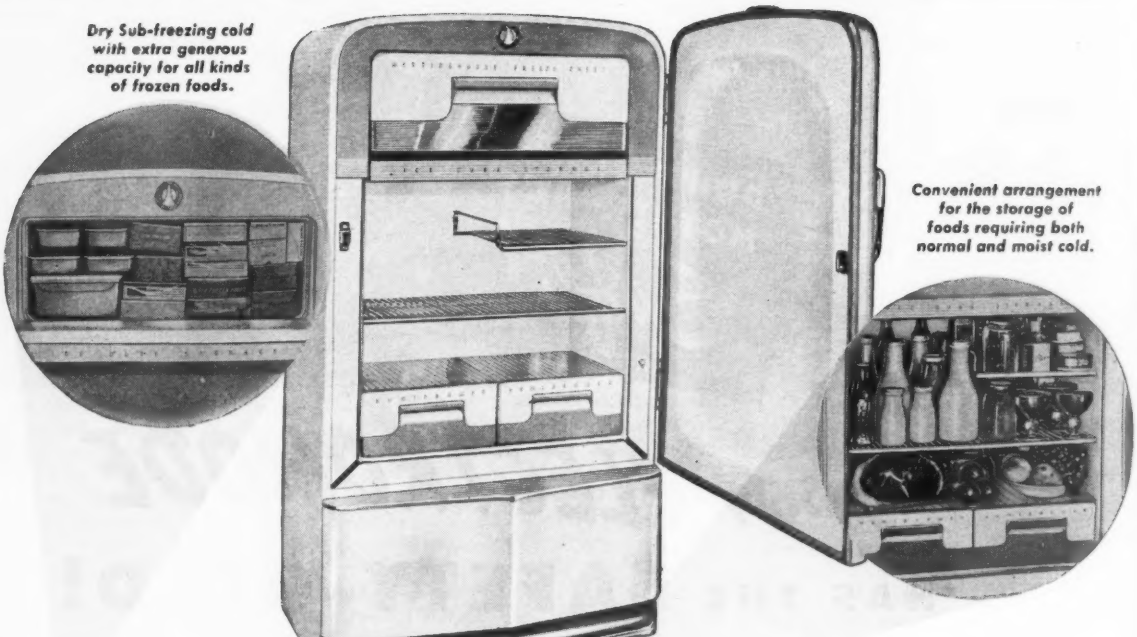
Model W-12 Bilt-in-Wall Room Heater. 230 volts A.C.; 1500 to 3000 watts; 5122 to 10245 BTU. Approximate wall opening required: 14¼"x18¼".

For Booklet 46-D illustrating and describing Electromode Room Heaters, write Department ES-57.

ELECTROMODE Room Heaters

WORLD'S LEADING EXCLUSIVE MANUFACTURER OF ALL-ELECTRIC HEATERS

This new Two-Temp rates a DOUBLE SPOTLIGHT


Dry Sub-freezing cold with extra generous capacity for all kinds of frozen foods.
Convenient arrangement for the storage of foods requiring both normal and moist cold.

1st. Because it's a real freezer **2nd.** Because it's a great refrigerator

Retailers close to Westinghouse won't be surprised by this announcement. Through the grapevine you've been hearing that something radically different in a combination freezer-refrigerator was on the way.

To give it to you fast, this new Two-Temp is a combination refrigerator that offers *sub-freezing*, normal and moist cold—all in a single cabinet. Thrifty utilization of space provides food storage for the makings of 76 meals . . . 56 pounds of frozen food and ice (1.6 cubic ft. frozen food capacity) . . . generous quantities of other types of foods—all this in a full size seven cubic foot refrigerator.

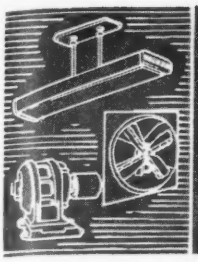
With more and more products like this coming along, it's a foregone conclusion that Westinghouse Full Line retailers will continue to occupy the spotlight of public preference for years to come.

TUNE IN: Ted Malone, Monday through Friday, 11:45 A.M., E.D.T., American Broadcasting Company Network

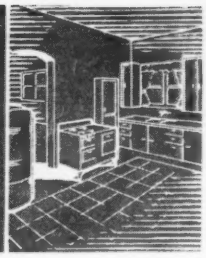
Every house needs
Westinghouse
MAKER OF 30 MILLION ELECTRIC HOME APPLIANCES

WESTINGHOUSE ELECTRIC CORPORATION • Appliance Division • Mansfield, Ohio

Plants in 25 Cities • Offices Everywhere

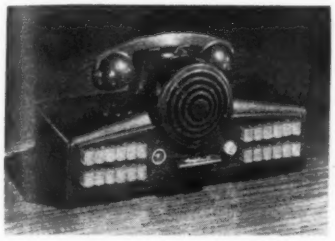


ELECTRICAL PRODUCT PARADE



501—Communication System

Manufactured by Rauland Corporation, Chicago, Ill.



NEW ELECTRONIC DEVELOPMENTS are incorporated in this new type intercommunication system to achieve an unusual degree of convenience, more versatile operation, life-like speech, and remarkable economy of installation.

The Amplicall Master Station unit is available with or without handset. Distinctive new features include "visual" busy signal, individual locking-type push-buttons for station selection, illuminated "on-off" volume control, plug-in cable connections, and a balanced line wiring system which prevents "cross-talk."

The new systems are available with facilities for the use of up to twenty-four master stations, permitting as many as twelve conversations to be carried on simultaneously.

* * *

502—Table-Top Water Heater

Manufactured by Westinghouse Electric Corporation, 306 Fourth Avenue, Box 1017, Pittsburgh 30, Pa.

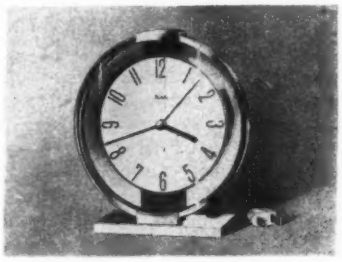
INCREASED CAPACITY in a table-top water heater with four square feet of acid - resisting porcelain enameled work surface is provided by this new 40-gallon automatic water heater.

Features include an accurate thermostat, with an adjustment range of 120° to 170°; an immersion type heating element that puts the heat directly into the water; Figerglas insulation in heavy layers that holds the heat inside the tank and keeps the outside cool; and a scientifically designed cold water baffle. The heavily galvanized copper-bearing steel tank is tested to withstand 350 pounds pressure. Standard 230-240 volt heating element, of 2,000 watts.

* * *

503—Self-Starting Clock

Manufactured by The Westclox Div. of General Time Instruments Corp., LaSalle, Ill.



SELF-STARTING and with current interruption signal, the "Oracle" has a glass and gold-covered metal case and silver dial. The base is diecast and is cushioned underneath. The clock stands 6¼ inches high.

* * *

504—Manual Starter

Manufactured by the Square D Company, Industrial Controller Div., 4041 North Richards St., Milwaukee 12, Wis.

DESIGNED TO MEET the exacting requirements of textile mill service, this starter is both compact and sturdy. It is suitable for mounting on the driven machine, wall, pedestal or any other location convenient to the operator.

The toggle-type operating machanism is not affected by vibration and can be operated in any position. The handle is recessed to protect it against breakage in the event of accidental impact. A direct mechanical linkage permits the contacts to be forced open in the event of accidental "freezing."

Double-break silver contacts have higher rupturing capacity and eliminate flexible connectors. Contacts require no dressing and can be replaced with the use of only an ordi-

May, 1947

Electrical South
1020 Grant Building
Atlanta 3, Ga.

Please send me additional information on the following New Electrical Products described in this issue:

No...... **No.**..... **No.**..... **No.**..... **No.**.....

Name.....

Company.....

Position or Title.....

Street Address.....

City.....**Zone**....**State**.....

nary screwdriver. Protected type overload relays suitable for group fuse applications are standard on this starter.

* * *

505—Light-Weight Iron

Manufactured by General Electric Company, 1285 Boston Avenue, Bridgeport 2, Conn.

IRONING TIME is cut by one-third, according to the manufacturer, with this new light-weight automatic iron. The "Visualizer" finger-tip control on the front of the handle enables the housewife to see the fabric-dial and select the appropriate heat for the material she is ironing.

Ironing fatigue is greatly reduced since the weight of the iron is only 2¾ pounds. This has been accomplished without any sacrifice of ironing surface, for the aluminum soleplate, at 27½ square inches, is extra-large. An indicator light signals the user the instant the selected temperature has been reached. Twin button nooks in the nose of the soleplate facilitate ironing around buttons. The heat-resistant Textolite handle is equipped with twin built-in thumb rests for both right and left-handed users. The six-foot cord is permanently attached to the handle.

* * *

506—Attic Fan Timers

Manufactured by Paragon Electric Company, Two Rivers, Wisconsin

THE AF SERIES is designed primarily to control the operation of window or attic ventilation type fans. The timers come in two models, one having a range of 0 to 10 hours adjustment, the other having 0 to 20 hour adjustment.

The timer motor operates only when the timer has been set and is running the fan. Setting may be changed at any time during the operating cycle. Setting is accomplished by moving the dial pointer clockwise to the hour of total operation desired. Graduations are clearly marked on the dial which is protected by a clear Plastacele window.

The overall size is 5-3/16 by 4-1/16 by 2-7/8 inches. The timers may be used for both semi-permanent window fan installations and for permanent attic fan installations.

* * *

507—Desk-Bracket Fan

Manufactured by Westinghouse Electric Corporation, 306 Fourth Ave., Box 1017, Pittsburgh 30, Pa.

FINISHED in baked-on, dark green enamel, this fan, Model 10LA, is adjustable for wall mounting, and has a reinforced, one-piece, welded steel guard. Arc of oscillation is adjustable to any angle from 0° to 75°. Oscillating gears are completely enclosed within the streamlined housing, preventing dripping of oil.

The fan has a 115-volt, 60-cycle, 2,000 rpm induction-type motor.

* * *

508—Fluorescent Lampholders

Manufactured by Allied Electric Products, Inc., 76-82 Coit Street, Irvington 11, N. J.

CRACKED SOCKETS, faulty contacts, and falling lamps are all eliminated by this fluorescent lampholder, the manufacturer states.

A spring action principle has been successfully applied to this lampholder which assures positive contact for both lamp and starter. Lamp prongs employing this principle grip the lamp pins and hold them securely so that they cannot release unless the lamp is removed by application of pressure. Guides prevent lamps from being inserted or removed incorrectly.

The contacts are made of heavy brass and are so shaped that firm holding contact is guaranteed. Vibration will not break contact with lamp pins under any condition.

509—Window Ventilator

Manufactured by The Metal-Tex Corporation, 1600 Junction Avenue, Racine, Wisconsin

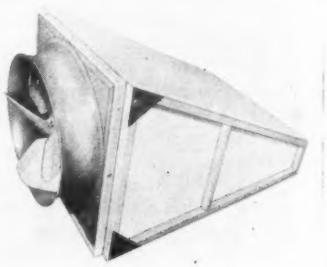
THE SPLEND-AIRE ventilator provides twelve complete air changes per hour. Only four screws are needed for installation of this unit in any window. It doesn't interfere with window operation since the window may be completely closed behind the ventilator.

The motor is quiet and vibrationless with semi-oilless bearings. It is a 110-volt, 60-cycle, a-c type, provided with an 11-foot cord, switch and rubber plug. The entire unit is unconditionally guaranteed against material or workmanship deficiencies, and is attractively finished in ivory enamel with chrome trimming.

* * *

510—Suction Chamber

Manufactured by Holcomb & Hoke Mfg. Co., Inc., Indianapolis, Ind.



A COMPLETE PACKAGE of automatic ventilation for home, business, and industry is now available with the development of this prefabricated suction chamber for use with Silent Breeze ventilating fans.

The chamber provides a leak-proof enclosure between the fan and the automatic ceiling shutter or grille. Rigidly constructed with metal-reinforced wood frame, it has self-sealing joints and panels of sound-absorbing material. Prefabricated in four panels, the chamber is easily assembled and installed without costly labor.

The all-inclusive Silent Breeze package includes: the fan itself, built in a variety of sizes for all types of applications; the suction chamber; Comfortrol, a precision time switch operating on a 24-hour cycle; two kinds of automatic shutters—one for ceiling and another for sidewall installation. These shutters, of the latest design, function automatically in coordination with the fan, opening as the fan comes on and closing as it is shut off.

MAGIC IN GLASS

Most of America's bedroom lighting problems can be solved efficiently and in good taste—by selection from this glamorous group of Virden glass bowl fixtures.

Glass is a worthy and flexible medium for the expression of grace and refinement. It can be rich and modest in the same breath.

Functional advantages are good distribution of light; ability to live happily with any decorative scheme; ability to provide modulated color tones including French crystal; crystal; ivory and rose. Ability to remain perpetually new.

See the Virden wholesaler near you.

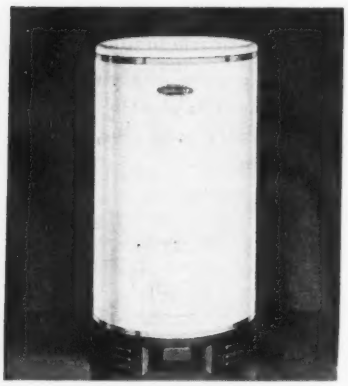
No. 5022—12" Bowl—Crystal Design—Bottom Ivory, Rose or French Crystal—Ivory Holder
No. 661—12" Bowl French Crystal Chromium Holder
No. 712—12" Bowl French Crystal or Ivory Ivory Holder
VIRDEN VALUE
No. 415—15" Bent Glass Bowl Crystal Design Ivory Holder
No. 412—12" Bowl Crystal Trim—Ivory or Rose Ivory Holder
No. 612—12" Bowl Sunburst Design—Clear Crystal Chromium Holder

John C. Virden Company • Cleveland, Ohio

Member American Home Lighting Institute

511—Automatic Water Heater

Manufactured by M. M. Hedges Manufacturing Co., Inc., Chattanooga, Tenn.



THE MERTLAND automatic electric hot water heater has proportions suited to the space available in many modern kitchens. The overall height of 41 inches and diameter of 20 inches of this 30-gallon heater makes installation practical in closets, under the stairs, and in odd nooks.

Features of this water heater are: fully-automatic, adjustable, snap-action temperature control; Chromalox quick-heating, immersion type heating unit; thick blanket type Fiberglas insulation completely surrounding the heavy gauge galvanized steel tank; and working pressure guaranteed at 150 pounds (tested at 300 pounds). An inlet baffle distributes incoming water. Protection from corrison is provided by the Mertland Magnesium Anodic Rod, which is optional equipment. The heating unit is 220 volts with wattages available to specification.

Available, also, is a similar model of 15-gallon capacity. It is only 32 inches high and available for either 110 or 220 volt operation, with wattages available to specification.

* * *

512—Indirect Air Circulator

Manufactured by Motionair, Inc., Dept. ES, 3321 E. Slauson Blvd., Los Angeles 11, Calif.

THE MOTIONAIR, an indirect air circulator, is designed to project a column of air drawn from floor level and directed toward the ceiling with sufficient velocity to produce the correct amount of air turbulence.

Made of sturdy cast aluminum and designed for eye appeal, the 1947 model is light in weight and can easily be carried from room to room by use of a handle cast into the top of the frame. The sturdy 12-inch blade is propelled by a 1/15-hp electrical motor. A two-speed switch, located on the base of the unit, permits heavy drive to establish circulation and extremely quiet half-speed drive to maintain comfortable air circulation.

* * *

513—Fluorescent Brackets

Manufactured by Mitchell Manufacturing Company, 2525 Clybourn Ave., Chicago 14, Ill.

WITH ALL-STEEL construction and with full chrome-plate, the Model No. 4007 fluorescent bracket fixture features an adjustable reflector shield that permits a wide variety of lighting effects. It can be mounted either vertically or horizontally, as a ceiling light, wall bracket or mirror light in bathrooms, kitchens, offices, etc. Model 4006 is identical in appearance and construction, but is supplied without the reflector shield.

Brackets use a single 15-watt fluorescent lamp and have the latest type high efficiency starter. An on-off switch is built into the case. Knockout is provided for convenience outlet. The size is 19½ inches long, 3½ inches high, and 3¼ inches wide. Height with shield is 4½ inches.

* * *

514—Cylinder-Type Heater

Manufactured by Tennessee Valley Marketers, Inc., 117 Ninth Ave. N., Nashville, Tenn.

UTILIZING natural up-draft circulation, this 3-way heat, cylinder-type portable electric heater is designed so that it will not tip over. A new type reflector beams as well as diffuses heat rays. The wiring is totally enclosed and tamperproof. The heater is of electric-welded, steel construction and has long-life nickel chrome wire wound on ceramic coils of high tensile strength. The wooden handle and feet are finished in blonde maple. The heater is 11 inches high by 15¾ inches long, and is listed by Underwriters Laboratories, Inc.

* * *

515—Motor Starting Relay

Manufactured by Ward Leonard Electric Co., 31 South St., Mount Vernon, N. Y.

OPERATIONAL DIFFICULTIES inherent with centrifugal switches commonly used for starting capacity motors are eliminated by this new Bulletin 109 Relay, according to the manufacturers. External or remote mounting of the relay is permissible, thereby eliminating maintenance difficulties present when sealed capacitor motors with built-in centrifugal switches are used.

"This motor starting relay is a potential device operating over a wide range of voltages. Chatterless relay operation right down to the drop-out point is obtained through its unique magnetic circuit design.

Contacts are single pole, normally closed, suitable for operation of a load as large as a 1-hp, 115 or 230-volt, 60-cycle capacitor motor. The relay measures 1½ inches high by 1¾ inches wide by 1-15/16 inches long.

* * *

518—Freezer Alarm Switch

Manufactured by Cutler-Hammer, Inc., 233 North 12th Street, Milwaukee 1, Wis.

A LOW-VOLTAGE electrical alarm switch designed to warn of mechanical difficulties in commercial and home freezers is now available. Installed with either a bell, light, or buzzer alarm device, the swtich functions as soon as the temperature in the freezer rises to a predetermined danger point. The alarm begins to operate while the interior temperature is still relatively low thus providing a reasonable period of time for emergency repairs before food spoilage.

The alarm is unique in that it contains a complete thermostatic element together with the contact mechanism and yet the entire device is no larger than an acorn.

* * *

519—Drawing Aid

Manufactured by Rapidesign, Inc., P. O. Box 592, Glendale, Calif.

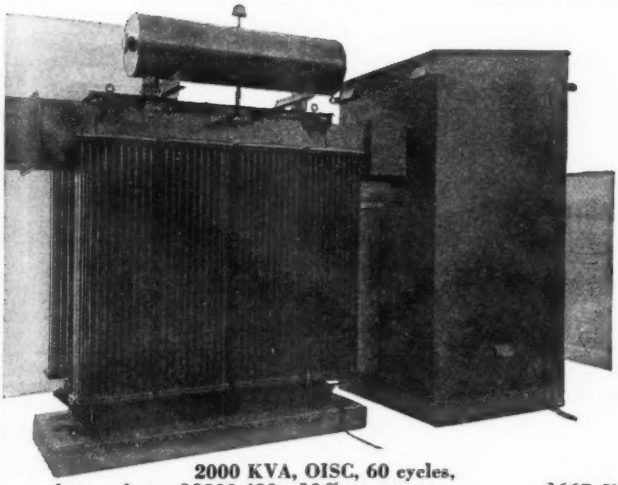
THE MANUFACTURERS announce the new ElectroMaster No. 175, which makes every electrical symbol of the power, light, and control field as shown in the American Standards Association manual as well as other accepted symbols.

Made from mathematical-quality plastic sheets, laminated to .080 thickness, the inner contours are beveled. Printing is between laminated sheets and cannot wear off.

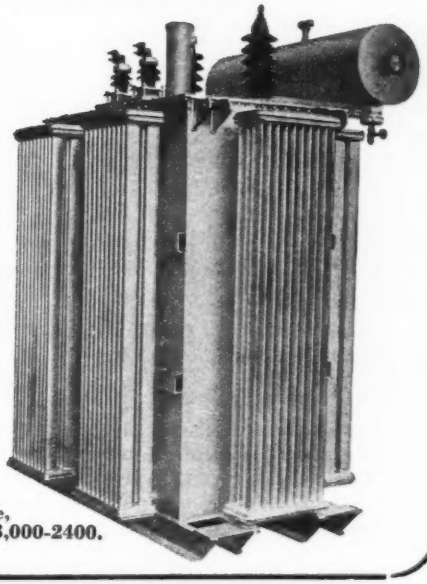
DAVIS TRANSFORMERS

ENGINEERED AND CONSTRUCTED TO GIVE CONTINUED DEPENDABLE SERVICE TO UTILITIES AND INDUSTRY

POWER TRANSFORMERS



2000 KVA, OISC, 60 cycles, three phase 13800-480, 10% tap range, throat connected to switch gear on high voltage side and bus run on low voltage side.



1667 KVA, OISC, 60 cycle, single phase, 33,000-2400.

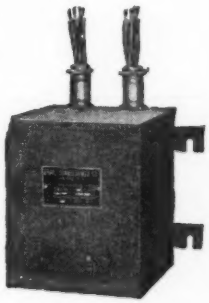
DISTRIBUTION TRANSFORMERS

15 KVA, single phase oil cooled 2400/4160Y —120/240.

250 KVA, single phase oil cooled 2400-480.

For power and lighting from 1 KVA through 15 KVA 230/460 — 115/230 equipped for wall, post or floor mounting.

Dry type distribution from 15 KVA through 100 KVA equipped for floor or wall mounting.



DAVIS TRANSFORMER CO.

Phone 177 CONCORD, N. H.

MANUFACTURERS OF OIL COOLED, DRY TYPE, POWER AND DISTRIBUTION TRANSFORMERS

525—Home Cleaning Kit

Manufactured by Eureka Williams Corporation, 6060 Hamilton Ave., Detroit, Mich.

ENTIRELY STREAMLINED, this new home cleaning system consists of a lighter-in-weight upright vacuum and a more compact tank-type unit, a group of attachable tools, a rug shampoo, and a power-driven floor waxer and polisher. A handy, permanent tool kit for carrying and storing attachment is also included.

Features of the upright cleaner include an extra-wide searchlight beam to light up more floor area, vinylite bumper guards, an easy-hold pistol-grip handle, and a turn-down cord clip which makes it unnecessary to unwind the cord before use. The tank-type cleaner is the lightest and most compact the company has ever made. Its motor retains maximum suction power, while a new sandwich-type dust trap insures greater filtering efficiency.

* * *

526—1947 Deepfreeze Unit

Manufactured by Deepfreeze Division, Motor Products Corporation, North Chicago, Ill.

STORAGE CAPACITY for more than 350 pounds of assorted perishable foods is provided in this model C10-47 of the new Deepfreeze line of home freezers. This 10-cubic-foot model's fast freeze compartment holds 91 pounds of assorted foods at one time. The automatic temperature control, located on the front of the freezer, tells food compartment temperature at a glance. Full freedom for both hands to reach for food is made possible by the counter-balanced lid.

A set of three removable storage baskets with dividers provide a helpful aid to systematic food arrangement. Three ice cube trays, with serving tray, hold six pounds of cubes. Ejectors in the trays release two cubes or a tray full.

As the freezer lid is raised, the interior of the unit is automatically lighted. An alarm rings the instant compartment temperature rises above 10 degrees F. The unit is finished with two coats of white baked enamel with chromium finished trim and is powered by a ¼-hp motor having forced draft cooling. The sealed motor is silent in operation and requires no oiling.

* * *

521—Waste Food Eliminator

Manufactured by Rousselle Corporation, 1673 E. 82 Place, Los Angeles 1, Calif.

THE DRAIN-O-MATIC waste food eliminator has two-directional operation of its waste shredding elements to provide complete assurance against food waste clogging; increasing operating life for the heat-treated alloy waste shredders; and double cleansing and flushing action. The direction of rotation of the rotary shredder is automatically changed, by a reversing switch, at the start of each operating period.

Powered by a ¼-hp motor, this unit operates at 1725 rpm, on 115 volts, 60-cycle a-c. Overload protection is provided, and motor bearings are permanently lubricated. The unit is of all-metal construction and weighs approximately 45 pounds. It fits all types of sinks which have 3½ to 4-inch drain openings.

* * *

524—Safety Switch

Manufactured by Pelham Electric Mfg. Corp., Erie Pa.

THE "ROTA-SWING" switch gives the operator positive protection, because the act of opening the door to reach the fuses automatically opens the circuit. The exposed parts can carry no current.

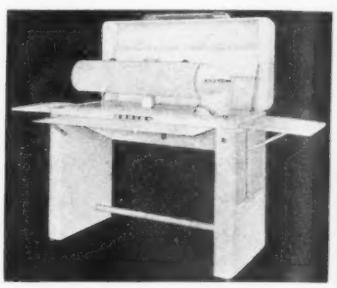
A sturdy rotating handle moves the knife blades to "off" or "on" position—while the switch is disconnected, which assures absolute safety. Steel guides hold the blades in positive accurate alignment. Each unit of a Rota-Swing equipped switchboard may be furnished with fuse gaps for any desired amperage or voltage within a wide range. Changes in fuse gaps are easily made at any time after installation.

The switch is especially suitable for heavy-duty power and light applications, and can be furnished for switchboards or panels of any size or capacity: 0 to 600 amps.; 250 volts d-c to 600 volts a-c; 2, 3, or 4 pole.

* * *

522—Console Ironer

Manufactured by Horton Manufacturing Company, Fort Wayne 1, Ind.



COMPLETE SIMPLICITY of operation is incorporated in the design of the Model 147 console ironer. A single feathertouch control lever starts, stops, and presses.

When closed, the ironer can be used as a utility table. When open it unfolds to correct height which means comfort to the seated operator. The many features of this new model include: a large 26-inch roll, full 6-inch diameter; twin thermostatic controls; pilot light; two end tables; free rolling roll; insulated heat retaining ironing surface; an accessible central emergency safety release; and a permanently lubricated, hermetically sealed motor. The floating shoe automatically gives correct pressure even over varying thicknesses.

* * *

523—Cable Connector

Manufactured by Gedney Electric Company, RKO Building, New York 20, N. Y.

DESIGNED for the new code PVX armored and non-metallic cable, the No. DC-15 duplex connector accommodates two runs of the small cables in a ½-inch knockout. A two-screw clamp provides an equalized squeeze action that firmly grips both cables under all conditions. The connector takes the full range of cable sizes from two-conductor, No. 14 to three-conductor No. 10.

the men who install it like

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...IT'S EASY TO HANDLE ON ANY JOB

Men who work with General Electric White rigid conduit *like* the way it handles. They're sold on it because of its true threading, its even cutting, and its smooth interior surface, which makes wire-pulling easy. Advantages like these mean that G-E White speeds construction, pleases customers. Take a tip from the men who install it—put in G-E White for construction speed and for smooth, permanent raceways.

AND GE WHITE GOES IN TO STAY

When jobs are done with General Electric White, you can count on it to *stay* in service. Its *hot-dipped* zinc coating—inside and out—and its hard, smooth Glyptal* lacquer finish resist the attacks of atmospheric corrosion.

Ask your nearest General Electric distributor for details on our complete raceways line—or write to Section C52-524, Appliance and Merchandise Department, General Electric Company, Bridgeport 2, Connecticut.

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RACEWAYS ROUND-UP

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Merchandise Distributor

Look to General Electric for everything you need for conduit installations. The complete line includes locknuts, bushings, connectors, wedges, reducers, enlargers, caps, ells, straps, boxes—practically all the accessories necessary to wiring safety and convenience. Try the new, exclusively General Electric, S-shaped bar hangers, too. They are adaptable to any stud spacing, and are easily and quickly installed.

The electrical flexibility of buildings equipped with General Electric Q-Floor wiring is assured, since every cell of the flooring can be used as electrical raceways as needed. Outlets, which can be placed anywhere in the floor on six-inch centers, can be added or changed with little expense. Ask us for the complete story on General Electric Q-Floor wiring.

General Electric Black conduit is a useful partner of General Electric White. It is coated with a hard, baked-on finish that provides outstanding protection from liquid chemicals, fumes, acids, and oils.

Problems in Applying the Code Discussed by Inspectors

THE ANNUALLY-HELD North Carolina Institute for Electrical Inspectors and Contractors met in Raleigh on April 22 and 23 with more than 350 in attendance to hear two days of discussions covering the most important problems of the electrical contractors and inspectors.

With N. E. Cannady, state electrical engineer and inspector, presiding, the conference speakers addressed an audience that overflowed the regular meeting room and included large numbers who stood rather than miss the sessions. It was a most unusual sight to see the meeting rooms filling up thirty minutes before scheduled starting time!

Following the welcoming address by the Honorable R. Gregg Cherry, governor of North Carolina, and the Honorable Wm. P. Hodges, North Carolina Commissioner of Insurance, and the annual report of C. S. Whitaker, secretary-treasurer, of the N. C. Chapter, IAEI, the conference was addressed by Dr. D. S. Weaver, of N. C. State College, on "Standards for Farmstead Wiring." Reviewing the growth of rural electrification in the state, Dr. Weaver disclosed that the number of miles of rural lines in the state had increased in a ten-years' period from less than a thousand to more than 33,000 miles.

Although the number of farms having electric service has been tremendously increased in recent years, the farmer is not yet making anywhere near a complete use of electric service. Dr. Weaver urged the conference of inspectors and contractors to assist farmers in getting adequate wiring and labor-saving appliances. He pointed out that the farmer needs water pumps and water heaters, for example, before washing machines.

"Better School Lighting" was the subject of an illustrated presentation by Rov A. Palmer, of Duke Power Co., Charlotte, well-known lighting authority. Reviewing the need for better lighting in schools, he pointed out that psychologists report that 85 per cent of all knowledge is obtained through the sense of vision and that this fact is supported by tests in actual classrooms. From the fundamentals of good lighting practice, he deduced that the basis for good school lighting is a large volume of light with low brightness.

The school wiring job covers a great deal more than lighting service, Mr. Palmer explained. Some of the special considerations in school wiring are laboratories, drawing and sewing rooms, domestic science, manual training, cafeterias, gymnasiums, auditoriums, and sight-saving rooms for those students having subnormal vision.

Identification of Listed Devices

The next speaker was F. R. Hanlin, of Underwriters Laboratories, Inc., Chicago, who discussed the identification of devices listed by the Laboratories. He differentiated between the re-examination service marker and the Underwriters official label. The re-examination marker is put on by the manufacturers, and, while the Laboratories make every effort to supervise the use of these markers, they do not have the same control over this phase of listing as they do the label service.

In explaining the use of the Underwriters Laboratories' book of listed appliances and devices, Mr. Hanlin emphasized the importance of catalog numbers, type designation, etc. Many manufacturers have listing service upon only a part of the devices they make. Consequently, the listing of any particular device must be checked by checking the listing for the specific catalog number of the item concerned.

Under the label service, the presence of the label is the guide to U-L listing. The exact wording of the label is most important, Mr. Hanlin said. For example, in the case of fixtures, if a fixture is approved for use as a recessed fixture it will be so marked. Some recessed type fixtures, for example, will be marked for use in non-combustible locations, and, obviously, such fixtures are not approved for mounting on or near combustible materials. Consideration must be given to such cautionary statements carried by the UL label, he said.

Other speakers heard at the opening session of the conference were Dwight L. Casey, general manager, Virginia and Carolina Chapters, National Electrical Contractors' Association, Charlotte; and J. S. Mahan, chairman of the IAEI Membership Committee, Chicago, Ill.

Joseph Whitner, South-Eastern Underwriters' Assn., Atlanta, opened the afternoon session with a comprehensive discussion of the new demand factors for electric ranges. He explained the application of the new material in Table 29 of the 1947 edition of the National Electrical Code, pointing out that the new column applies to ranges of any rating up to 12 kilowatts, and that the supplementary data in the footnote provide for extending the rating up to a maximum of 21 kilowatts. He pointed out that the new column gives maximum demand values instead of demand factors, and that these demand values are, in general, somewhat lower than would result from computation by using the old table.

Howard H. Weber, of the United States Rubber Co., New York City, next addressed the group, discussing the new insulations for building wire.

After describing the wires available and their principal applications, Mr. Weber discussed the copper shortage and indicated that he did not expect the situation to improve for some time. He said that the shortage would be overcome to some extent by the use of aluminum building wire, and that most inspectors were accepting such installations.

Use of Aluminum Wire

Experience has shown, he said, that corrosion effects on aluminum wire have been overemphasized. Even on the seaboard, it appears that wiring systems will deteriorate before the wire suffers any great damage. The fact that materials are now available for both soldering and welding aluminum conductors will make the use of this material practical. Several manu-

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Nominal Thickness	100	135	175	175
Tensile Strength — lbs. P.I.W.	.27	.47	.66	.77
Weight per sq. yd. — lbs.	1.42	1.42	1.41	1.41
Specific Gravity				
Dielectric Strength — V.P.M.	1500	1500	1400	1300
¼" Electrodes — A — ASTM — 25°C.	1000	1000	900	900
¼" Electrodes — A — ASTM — 175°C.				
Power Factor — 100°C. — Percent			1.0	1.0
Conditioned 3 hours at 105°C.	1.0	1.0	1.4	1.4
Conditioned 24 hours at 65% R.H.	1.3	1.3	3.4	3.4
Dielectric Constant — 100°C.	3.5	3.5		
Moisture Resistance			0.015	0.015
$\%H_2O$ absorbed — 24 hrs. 65% R.H.	0.01	0.01	0.55	0.55
$\%H_2O$ absorbed — 24 hrs. immersion	0.70	0.60		

Thermal Stability — Tests made on Silicone Varnished Fiberglas indicate that this material is stable up to 175°C.

Chemical Resistance: Silicone Varnished Fiberglas shows excellent resistance to most alkalies, such as 10% sodium hydroxide and concentrated ammonium hydroxide. A 10% solution of HCL and nitric acid showed no effect on Silicone Varnished Fiberglas.

Carbon tetrachloride, benzene and hot transformer oil (GE 10C) cause a softening of the Silicone varnish film.

THICKNESSES AND WIDTHS: Silicone Varnished Fiberglas is available in the following standard thicknesses: .004" (.002" base), .007" (.003" base), .010" (.004" base), .012" (.004" base). Standard full width rolls are 36" wide and 25 and 50 yards long. Also furnished in straight cut tape rolls ½" wide and up and in bias cut strips 51" long. Thicknesses other than standard are supplied on minimum orders of 100 yards.

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• For slot insulation, coil and cable wrapping — for high frequency equipment, transformers, and generators — for relays, rheostats, and resistors — as well as for a host of other electrical parts subjected to elevated temperatures, Silicone Varnished Fiberglas is unequalled. Investigate its use for your insulation problems. Write today for samples.

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facturers are making cadmium-plated connectors which can be used safely on either copper or aluminum wire and these soon will be available.

He warned contractors, however, that on long runs more consideration must be given to voltage regulation when aluminum conductors are used.

What's ahead in the way of code changes was the subject of a talk by Victor H. Tousley, secretary of IAEI, Chicago. Although the new 1947 edition of the Code has just been distributed, there have been accumulated already some 70 or 80 suggestions for changes for the 1950 edition. Mr. Tousley discussed these briefly, pointing out that they will receive further consideration at the IAEI Section meetings later on this year.

Grounding Appliances

The second day of the conference was opened with a discussion of the grounding of portable appliances by L. C. Price, of NEMA, New York City, N. Y. He reviewed the report of the special committee studying this subject. (See ELECTRICAL SOUTH, March, 1947, issue, page 56).

Mr. Price was followed on the program by H. H. Watson, General Electric Co., Bridgeport, who continued the discussion on grounding of portable appliances. He reported what took place at the meeting of the Safety Committee, AIEE, at the winter convention of that organization. More than 25 different organizations were represented at that meeting and the discussion brought out their viewpoints on grounding.

The majority of those discussing the subject at the AIEE meeting were of the opinion that greater dependence should be placed on insulation rather than grounding. From the comments it was indicated that there is a great opportunity for improvement in flexible cords. The opinion was expressed that cords should outlive the devices served by the cords.

Following his discussion, Mr. Watson displayed a proposed design of a duplex outlet and cap, which included provisions for grounding portable appliances. The design was advanced by a group of NEMA members of the Wiring Device Division.

The next speaker was H. M. Dreher, of the Armored Cable Division of NEMA, New York City, who spoke on recent developments in armored cable. He directed attention to the tinned bond wire now being included in armored cable assemblies directly under the armor. The result of this bond wire has been to reduce the effective resistance of the armor to about a third of what it would be otherwise. The proposed method of terminating the bonding wire is to bend it back over the armor so that the fitting grips both the armor and the bonding wire.

"Working Together in the Public Interest" was the subject of T. B. Smiley, of Carolina Power and Light Co., Raleigh, who next addressed the conference.

Mr. Smiley brought out the possibility of new homes having demands as high as 15 kilowatts when equipped with automatic washing machine, electrical water heaters, clothes drier, ironer, and electrical range, in addition to the usual appliances. The installation of this equipment is going to make it necessary to install 100-ampere service entrance switches. He urged dealers and contractors to give consideration to the need to install adequate electrical installations as well as safe installations, and pointed out the need for selling adequacy and service.

A report on the activities of the Board of Examiners of Electrical Contractors of N. C. was presented by D. S. Nichols, field representative. More than 1,100 contractors are now licensed by the state, Mr. Nichols said. With reference to violations, he said that some 400 complaints were filed during the past year, but evidence of violation was obtainable in only 18 cases and convictions were obtained in 16 of these. Most violations occur in localities where there is not an adequate inspection authority.

The second morning session was concluded with talks by E. B. Paxton, General Electric Co., Schenectady, N. Y. on "Applications of 4-Wire 3-Phase Systems in Industrial Plants," and L. M. Keever, of N. C. State College, Raleigh, on "How to Use the Code." Mr. Keever's discussion was devoted entirely to motors. He assumed a typical installation and then traced the various procedures required to determine branch circuit conductor size, branch circuit overcurrent protection, rating of motor-running overcurrent device, rating of motor controller, feeder conductor size, and feeder overcurrent protection.

An interesting point brought out in the discussion was the fact that whenever the current rating of a motor is used to determine the current carrying capacity of conductors, switches, branch-circuit overcurrent devices, etc., the values given in the Code Tables 21 to 24 shall be used in lieu of actual current rating marked on the motor nameplate, but that the motor running overcurrent protection shall be based on the motor nameplate current rating.

The last afternoon session of the meeting was conducted as an open forum with a panel of Code experts available at the speakers' table to help determine answers to the questions asked from the floor.

Official Interpretations Of the Electrical Code

Tables 1, 2, 4, and 9, Number of Signal Wires in One Conduit. Reduced Carrying Capacity Where Control Wires Are in Same Conduit With Power Wires. Interpretation No. 283. Issued December 31, 1946.

QUESTION 1: Is it the intent to limit the application of Table 9 of the 1947 edition of the National Electrical Code to the particular use mentioned in the note following the Table, providing when more than 9 conductors are installed in a single raceway the purpose and intent of section 3012 are satisfied?

FINDING: No.

QUESTION 2: May Table 9 of the 1947 edition of the National Electrical Code be applied in the installation of conductors for low-energy power and circuits of Class I signal system?

FINDING: Yes.

QUESTION 3: Is it necessary, when applying Tables 1, 2, and 4 of the 1947 edition of the National Electrical Code to limit the allowable current-carrying capacity of motor circuit conductors, when associated conductors for Class I remote control and signal circuits (Article 725) are contained in the same conduit or tubing and on the basis of the total number of conductors in the raceway?

FINDING: No. only the power load conductors need be counted.

* * *

Section 3736. Locknuts With Bushings of Insulation Material. Interpretation No. 284. Issued January 22. 1947.

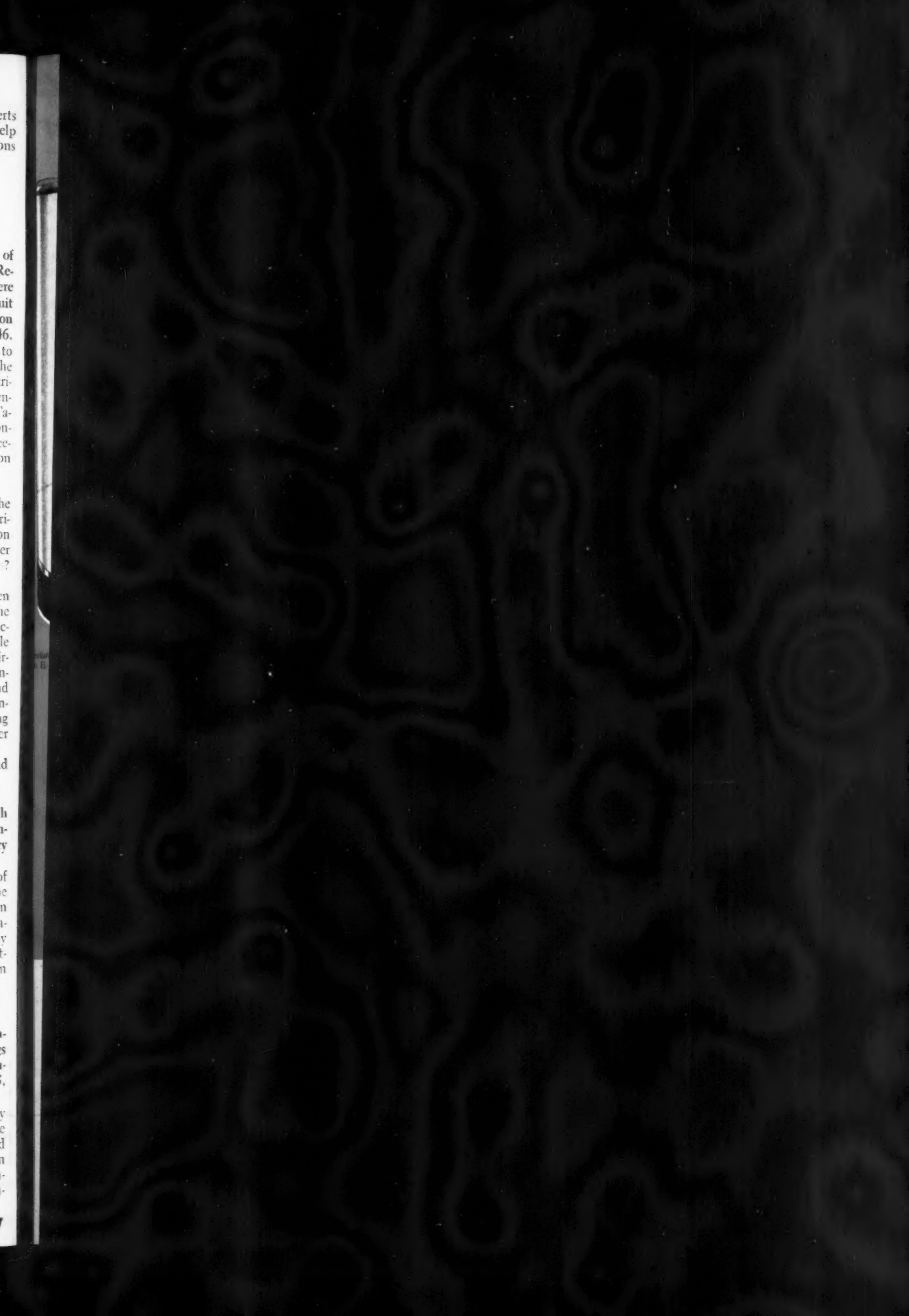
QUESTION: Was it the intent of the Electrical Committee that the last sentence of paragraph b of section 3736 of the 1947 edition of the National Electrical Code applies to any bushing constructed wholly of insulating material employed, as provided in section 3468?

FINDING: Yes.

* * *

Section 2124-b. Three-pole Laundry Outlets in Apartment Buildings With Central Laundry. Interpretation No. 285. Issued February 5, 1947.

QUESTION 1: In a multi-family dwelling of the apartment house type where washing machines are installed by the owner in a laundry room in the basement for the use of the tenants, does the 1947 edition of the Na-



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. . . lower iron. Slight handle pressure locks legs and you resume ironing.

Lower iron and gently press rear of handle to lock legs in place. Resume ironing.

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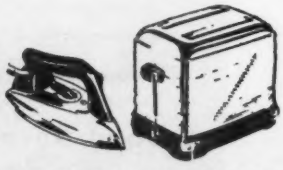

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tional Electrical Code require the installation of a 3-pole receptacle on a No. 12 wire circuit in each apartment to comply with the provisions of paragraphs 2124-b and 2115-b?

FINDING: No.

QUESTION 2: In a housing project comprising several apartment buildings for over 1,200 families, where a central laundry is provided, what would be the intent of the 1947 edition of the National Electrical Code relative to the requirement for installation of 3-pole receptacles for the connection of laundry appliances?

FINDING: The intent of the Code is to require 3-pole receptacles in the laundry locations, which in this case is the central laundry provided for the individual tenants in the several apartment buildings comprising the housing project.

* * *

Table 11, 1947 Code. "Rewiring" in Exposed Raceways. Interpretation No. 286. Issued February 14, 1947.

QUESTION: Is it the intent of Table 11—1947 edition of the National Electrical Code to permit rewiring in existing exposed raceways, where it might be necessary to enlarge holes through floors, walls, etc., and thereby disfigure the finish of buildings to install larger size raceways?

FINDING: No; it is the intent that this provision apply to concealed raceways.

* * *

Section 4150. Single Branch Circuit in Fixture Used as Raceway. Interpretation No. 287. Issued February 21, 1947.

QUESTION: Does the expression "single branch circuit" in section 4150 of the 1947 edition of the National Electrical Code limit the application of this section to a two-wire branch circuit?

FINDING: No.

New Electrical Books

Radio Receiving Tube Data Book

Published by the Radio Tube Division of Sylvania Electric Products Inc., Emporium, Pa. 378 pages, illustrated. Price 85c.

BASIC APPLICATION DATA for 545 types of radio receiving tubes used by circuit designers, radio set repairmen, and industrial electronic engineers are included in this comprehensive technical manual.

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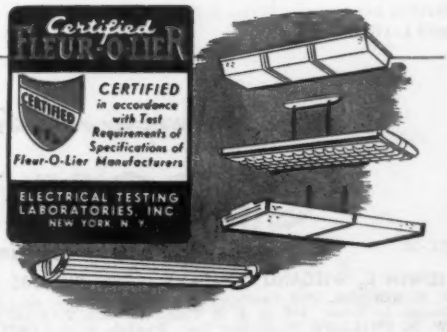

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resistance coupled amplifier data; interchangeable tube charts; connections for standard RMA internal and external shields; typical receiver and amplifier circuits; dictionary of tube, circuit, and FM terms; and instruction on the use of characteristic curves.

Individual tube characteristics are arranged according to types. The manual is attractively bound with ring type plastic spine so that it will lie flat when open.

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Published by Chemical Publishing Co., Inc., 26 Court St., Dept. FM, Brooklyn 2, N. Y. 1120 pages. Price $10.00.

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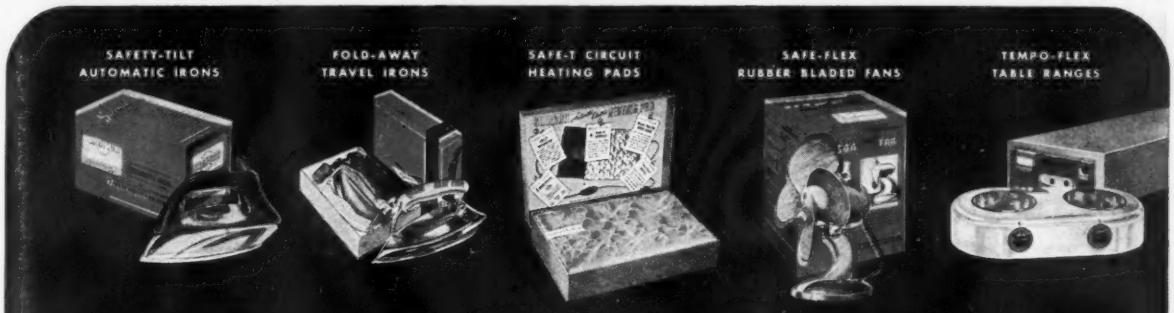

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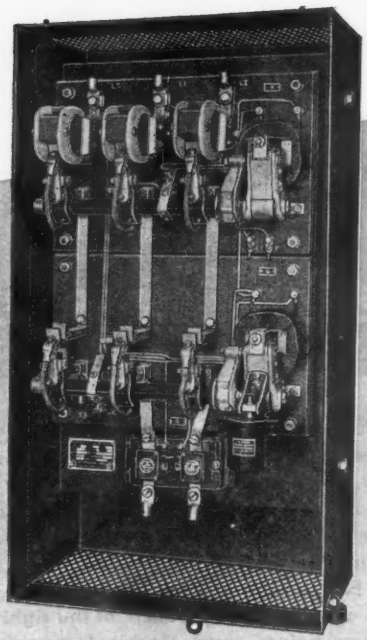
"3C" Bulletin 6080 A. C. MAGNETIC STARTERS

For Dependable Low-Voltage Starting of Squirrel Cage Induction Motors



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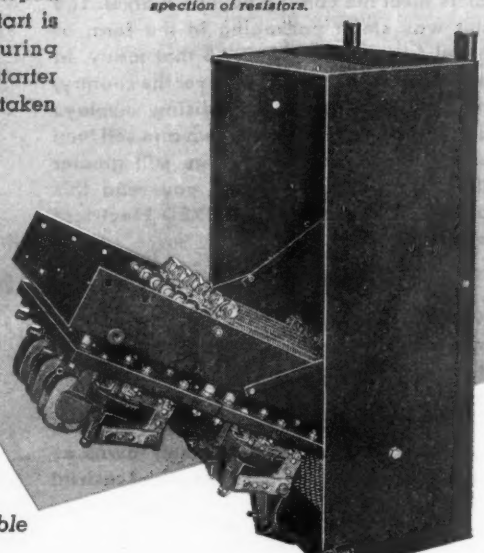

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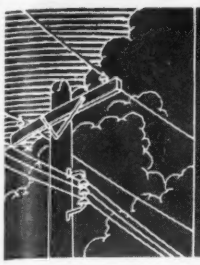
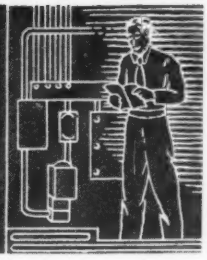
EVERYTHING UNDER CONTROL • 1146 EAST 152nd STREET, CLEVELAND 10, OHIO



NEWS BRIEFS OF THE INDUSTRY



New Interpretation of Robinson-Patman Act

SPEAKING in New York City, recently, Representative Wright Patman, of Texas, and one of the co-authors of the Robinson-Patman Act, declared that the acceptance of unjust cancellations or return of merchandise violates the Robinson-Patman Act. The Act prohibits discrimination of any sort between purchasers, he pointed out, and when "unwarranted cancellations or returns" are accepted by the manufacturer, he is giving the customer involved a benefit not extended to other "more fair-minded patrons," thus violating the law.

"You will be conforming to the spirit and letter of the Robinson-Patman Act if you refuse to allow a firm's order to be cancelled without adequate reason or if you decline to take back merchandise that fulfills all the requirements of a good delivery," Congressman Patman said.

Commenting in its bulletin on this new angle, the Electric Institute of Washington says:

"This is an entirely new twist to the Law and took everybody by complete surprise. Precious little comment is available today from either manufacturers or retailers, but they will both no doubt have plenty to say.

"If upheld by the courts and put into practice by the Federal Trade Commission, the impact would be terrific. Much will depend on how "unjustified returns" are interpreted, but at best it will be a reversal of normal industry practice with respect to cancellations and returns.

"It hits the appliance industry particularly hard, since durable goods are extremely vulnerable to return practice especially in view of the unstable conditions existing in the industry today. Returns are reported to have been heavy lately in many categories and widespread cancellations are anticipated because of the slow movement of many appliances. This had manufacturers plenty worried and such an interpretation of the law would be a perfect out for them.

"It is too early to gauge the real impact of this bombshell, but an appraisal should be possible within a few days, when reaction will have crystallized."

Yale & Towne Company Enters Appliance Field

YALE, a trade name used internationally to identify the locks, builders' hardware, and industrial equipment manufactured by the 79-year-old Yale & Towne Manufacturing Company, has now made its appearance on a consumer product in the highly competitive traffic appliance field with the introduction into test sales areas of the Tip Toe automatic electric iron, the first of a line of home appliances to be produced at the company's new Buffalo plant.

Produced after three years of study, research and experimentation, the Tip Toe iron, has a hinged sole plate making the appliance virtually two irons in one. The dual sole plate is covered by a basic patent.

The toe part of the sole plate, functioning as a tiny doll-sized iron, enables housewives to iron with ease such difficult-to-get-at places as ruffles, smocking, pleats, gathers, yokes, and small sleeves. The toe area ironing surface is one-fourth of the total sole plate.

The total sole plate of the iron as a unit, is more than 29 square inches, making it an iron with one of the largest sole plates in use. Each of the sole plates, has its own cast-in tubular heating element.

As a unit, the Tip Toe iron operates as any other iron. Advantages claimed by the manufacturers include light-weight, large sole plate, air-cooled handle and accurate thermostat. An additional feature of the Tip Toe iron is the ten thousand cycle reversible cord which allows the left-handed ironer to enjoy the same ironing comfort as her right-handed counter-part.

ALABAMA POWER RELIGHTS—One of thirteen floors being relighted by Alabama Power Company, as rapidly as equipment can be obtained, is shown here. This is the company's engineering department on the sixth floor. An identical installation has also been installed on the fifth floor. Assuming leadership and guidance toward better lighting in the area it serves, the Alabama Power Company is lighting its own building to an intensity of 50 foot-candles and is setting up a systematic maintenance program. (Photo courtesy Wakefield Brass Co.)

Score a home run... a home run in terms of increased revenues . . . a home run in terms of consumer satisfaction . . . because the WESIX Wiredheat Systems not only satisfy the ever growing demand for 100% electrically heated homes but provide increased revenues as well.

Good diversity. Since each room to be heated requires a separate heating unit, thereby eliminating unnecessary over-all heating, demands are not co-incident . . . and with thermostatic control good diversity is assured.

Thermostatically controlled automatic heaters prevent waste of current due to overheating . . . provide uniform or steady loads with maximum consumer comfort.

The fully insulated house requires less connected load . . . leading to a saving in transformer and service capacity . . . producing a flat load characteristic.

Correctly sized heaters provide sufficient capacity without excess to keep demands at a minimum. *(And the WESIX installation is correctly sized because of accurate engineering service.)*

Planned distribution systems can meet the exact locational demand of the load. By utilizing the National Electrical Code all-electric homes can be controlled.

FOLLOW THRU

BUILD REVENUE

WESIX ELECTRIC HEATER CO.
390 First Street, San Francisco, California

SCORE WITH WESIX

WIN WITH A PROFITABLE LOAD

An outstanding feature of the new Yale iron is its dual sole plate. Here the iron is shown in the "Tip Toe" position. An easy forward pressure has changed a large iron into a small, doll-sized one, just right for nosing into gathers, with the rear of the iron up off the ironing board.

Consistent with Yale & Towne's policy of diversified manufacture and autonomous unit supervision, all Yale traffic appliances will be manufactured at the new Yale & Towne plant, 2933 Main Street, Buffalo, New York. This home appliance manufacturing unit covers a land area of 17 acres and manufacturing space of 80,000 square feet.

Distribution of the Tip Toe iron and all other Yale traffic appliances to be produced will be through a limited number of selected franchised distributors.

A unique feature of the Yale marketing plan will be its main reliance upon women as field sales representatives. With the exception of the district manager in charge of each territory, who will be responsible for distributor contacts, the entire merchandising effort around the Tip Toe iron will be supported by a nation-wide organization of specially trained young women who will educate retail clerks, set up local merchandising programs for franchised retail dealers, and will personally demonstrate the iron where store traffic warrants.

To support the retail sale of the Tip Toe iron, Yale & Towne will advertise the product in the national trade and consumer press, and through co-operative advertising with retailers, in local papers in all markets.

Progress Report Issued By Hotpoint President

A PROGRESS REPORT on the company's multi-million dollar expansion program has been announced by James J. Nance, newly elected president of Hotpoint Inc., of Chicago. In a special statement less than 24

hours after his election, Mr. Nance said that a 38-acre site on Chicago's west side had been selected for the company's new range factory. This will give Hotpoint, a General Electric affiliate, a production capacity for 12,000 ranges weekly at range factories at Chicago totaling more than one million sq. ft. of floor area. He said that work will be pushed as rapidly as possible to have the expanded facilities in operation by January, 1948.

The new Hotpoint president, who had formerly been executive vice-president, noted that Hotpoint's complete kitchen merchandising program is spearheaded by its longtime position in this field. He said that plans would include factory expansion for water heaters, dishwashers, and other appliances in the company's complete kitchen and laundry lines would be announced later.

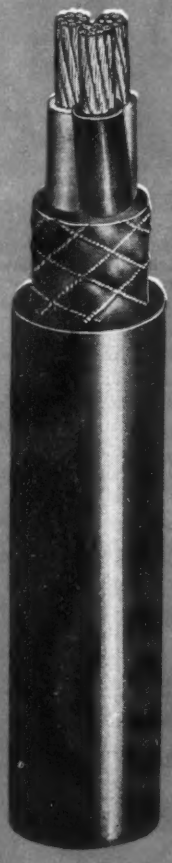
James J. Nance

Noting that sales records, however great in the past for ranges and other major appliances, would be "shattered by the vast market that the industry must meet," Mr. Nance said that Hotpoint was tooling up in machinery and personnel to defend its leadership on range, water heater, and dishwasher sales, and "to build for the top position as the industry's complete electric kitchen manufacturers."

In assuming the top position at Hotpoint, Mr. Nance climaxes a climb in merchandising and management dating back to the early 20's when he gained his early training at National Cash Register. Joining General Motors at the time the Frigidaire plant was first put into production at Dayton, Ohio, he literally grew up with the appliance industry. Later, he filled management positions at Easy Washing Machine Company and Zenith Radio Corporation. Before joining Hotpoint as exe-

Highest Quality!

CRESCENT
IMPERIAL NEOPRENE
CRESCORD



For Heavy Duty Industrial Use

The tough NEOPRENE Jacket gives this cable maximum life under the most severe operating conditions. Among its advantages, it is:

OIL PROOF
SUN PROOF
ABRASION RESISTING
FLAME RETARDING
FLEXIBLE
LONG LIVED

Furnished in all sizes
From No. 18-Two Conductor
To 500,000 C. M. Three Conductor

CRESCENT
WIRE and CABLE

CRESCENT INSULATED WIRE & CABLE CO.
TRENTON, NEW JERSEY
ATLANTA, GA., Edgar E. Dawes, 401-402 Rhodes Building
NEW ORLEANS, LA., Paul Hogan, Jr., 305 Levert Building
RICHMOND, VA., Robert W. Fishburne, 112-114 Exchange Bldg.
DALLAS, TEXAS, M. C. Huie Company, 707 Thomas Building

cutive vice-president, he was on the staff of Charles E. Wilson, president at General Electric Company, New York.

While the main assembly lines will be moved to the newly selected location, production at the company's other Chicago range factories will continue as supply sources for specific sub-assembly units and for processing components.

Present production of 1947 ranges at the company's Chicago plants, is "up to schedule on the largest production program in its 40 years of Chicago range manufacturing."

DATES AHEAD

National

National Electronic Equipment Show, Hotel Stevens, Chicago, Ill. May 13-16, 1947.

Annual Meeting, Edison Electric Institute, Atlantic City, N. J. June 2-5, 1947.

46th Annual Meeting, National Electrical Contractors' Association, San Francisco, Calif. September 8-10, 1947. Clint J. Harder, National Secretary, 633 Investment Bldg., Washington 5, D. C.

Annual Convention, Illuminating Engineering Society, New Orleans, Sept. 15-22, 1947.

Transmission and Distribution Committee, Edison Electric Institute, Benjamin Franklin Hotel, Philadelphia, Pa. October 9-10, 1947.

2nd International Lighting Exposition and Conference, Stevens Hotel, Chicago, Ill., November 3-7, 1947. A. B. Coffman, Manager, 111 West Jackson Blvd., Chicago 4, Ill.

Southern

Missouri Valley Electric Association, Blackhawk Hotel, Davenport, Iowa. May 22-23, 1947.

Virginia Chapter, IAEI, Virginian Hotel, Lynchburg, Va. June 19-20, 1947. A. M. Miller, Secretary-Treasurer, 910 West 30th St., Richmond 24, Va.

Fall Conference, Engineering and Operation Section, Southeastern Electric Exchange, Henry Grady Hotel, Atlanta, Georgia. Sept. 25-26, 1947.

Southern Section, International Association of Electrical Inspectors, George Washington Hotel, Jacksonville, Florida. Oct. 27-29, 1947. A. M. Miller, Secretary-Treasurer, 910 West 30th St., Richmond 24, Virginia.

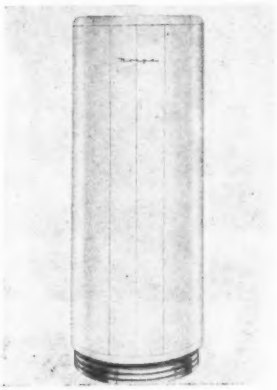
General Sales Conference, Southeastern Electric Exchange, Atlanta Biltmore Hotel, Atlanta, Ga. October 29-31, 1947.

Norge Enters Electric Water Heater Field

THE NORGE DIVISION of Borg-Warner Corp., Detroit, Mich., announces its entry into the electric water heater business with the introduction of five models of the product into the company's line of household appliances.

In making the announcement, M. G. O'Harra, vice-president and director of sales, disclosed that deliveries are now being made to distributors throughout the nation and that dealer sampling should be completed within a relatively short period.

The new electric water heaters are being offered in five sizes, with gallonage capacities of 80, 66, 52, 40 and 30. They are of the round, upright type, are finished in easily cleaned, high-gloss, baked white enamel, and are completely insulated with a five-inch thickness of glass wool.



One of the five new models of electric water heaters manufactured by Norge. Models come in 30, 40, 52, 66, and 80 gallon sizes.

A single or double heating element, of "nichrome," is available, dependent on local utility practices. Completely automatic, the units are equipped with thermostats, and have a finger-tip control for simple temperature adjustments to suit the requirements of the user.

One of the features of the heaters is a diffusion baffle which prevents the mixing of inflowing cold water with that already heated.

Commenting on the firm's move in entering this field, Mr. O'Harra stated that it was logical from two standpoints: (1) that only one home in ten has an automatic water heater of any kind, thereby making the theoretical sales potential nine homes out of every ten, and (2) that introduction of a water heater rounds out what is already "the most complete line of major household appliances offered by any producer."

Okonite Establishes New Branch Office

A NEW BRANCH OFFICE has been established at 601 Chamber of Commerce Building, Charleston, W. Va., by The Okonite Company of Passaic, N. J.

Edward A. Damrau, formerly in charge of the Pittsburgh, Pa. office of the company, has been appointed manager of the new branch office. Mr. Damrau will handle all electrical wire and cable sales in West Virginia and adjacent parts of Kentucky and Virginia for both Okonite and its Hazard Insulated Wire Works Division.

DEEPFREEZE DISTRIBUTOR MEETING IN ATLANTA—F. F. Duggan, general sales manager, Deepfreeze Division, Motor Products Corporation, points out the many features of the company's new line of home freezers to distributors at a recent meeting held in Atlanta. The purpose of the meeting was to acquaint the distributors with the new models' improvements. In the picture (from left to right) are: E. M. Ostendorff, sales supervisor, Cannon Distributing Company, Charleston, S. C.; Mr. Duggan; T. F. Elrod, Southern regional sales manager, Deepfreeze; and N. L. Cannon, president, Cannon Distributing Company.

Look out for brick-bats in that bouquet

MOST national advertising looks mighty attractive, Mr. Radio Dealer. But look under the pretty flowers—is there a hidden brick-bat? How much work does that advertising do for *you?*

No such questions plague Sparton dealers. Benefits of Sparton's sparkling, full page, four-color ads, now appearing in leading national magazines aren't spread thin as watered milk over 500, 50, 20, or even 10 dealers per area.

S•C•M•P•* makes national advertising local

Under S.C.M.P.* (Sparton's plan that cuts distribution costs and ends retailing nightmares) there's only ONE Sparton dealer in each community. So, a person who reads a Sparton ad is directed to that one dealer—easily located through the yellow pages of the telephone directory.

See what a difference it makes! Here's national advertising that *really works* locally. Sparton dealers get full value from every ad in every magazine reaching their territories.

Yes sir, advertising like that is welcome as flowers in May! And there's more too—combine the *other* features of S.C.M.P.* with Sparton's top quality and low retail price—add for good measure important new product news soon to be announced—then you have the *full* story.

It *pays* to be a Sparton dealer!

THE SPARKS-WITHINGTON CO., JACKSON, MICH.
Radio and Appliance Division—Plant 5

ONE *Sparton* DEALER
in each community

Check These Profit-Increasing Features

- One exclusive dealer in each area
- National advertising that works locally
- Direct factory-to-dealer shipment
- Low consumer prices
- Factory prepared and distributed promotion helps
- Seasonal promotions
- Uniform retail prices
- Products styled by outstanding designers

Sparton
Radio's Richest Voice Since 1926

*S•C•M•P• SPARTON CO-OPERATIVE MERCHANDISING PLAN. A proven exclusive method of profitably retailing radios and home appliances that has been and is being advertised regularly to consumers in leading magazines.

Catalogs, Bulletins and Technical Data Available to Readers of Electrical South

109—Hanger Outlets and Floor Boxes. Bulletin No. 72 is a new bulletin recently issued by Frank Adam Electric Co., St. Louis, Mo. Various type hanger outlets and floor boxes are illustrated and described in the bulletin, and the list price of each is given. A new addition to the line of hanger outlets, the Clock, is also described in a special insert.

110—Quikheter. The advantages of the new built-in type electric Quikheter are discussed in Bulletin No. 73, of the Frank Adam Electric Co., St. Louis, Mo. Outstanding features of the Quikheter, such as its beautiful chromium finish front and its genuine Michrome wire heating element which should never wear out under normal operating conditions, are described, and illustrations show the Quikheter brings warmth into every room.

111—Electronics Digest. Recording the latest developments in electronics at work, the new "Electronics Digest" which includes articles on Stratovision, Mot-O-Trol, fluorescent light, electrolytic tin plating, X-ray inspection, and electrostatic air cleaning is announced by the Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa. The 50-page illustrated booklet, (B-3726), is published quarterly.

112—Modernization Guide. Concentrating on plans for improving the most inefficient parts of the wiring system in the home, Central Electric Company's Appliance & Merchandising Department, 1285 Boston Ave., Bridgeport 2, Conn., announces a 20-page Electrical Modernization Guide. It is designed to overcome the conception of electrical modernization as an inconvenient and expensive job. Highlight of the booklet is a description of the add-a-circuit program for rewiring.

113—Airport Equipment Booklet. Typical lighting plans and wiring diagrams for all classes of airports are included in a new 56-page booklet "Airport Electrical Equipment" (B-3573) announced by the Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. Designed to meet CAA and Army and Navy standards, equipment listed and described in the booklet is also keyed by symbols to wiring diagrams and lighting layouts in the plan sections, to assist airport engineers in meeting specific requirements for any type of airport operations.

118—Theater Lamp Booklet. Westinghouse Lamp Division, Bloomfield, N. J., announces a new 32-page illustrated booklet, (A-4575), which gives detailed information covering the selection, use and maintenance of lamps for all theater applications, emphasizing particularly the new fluorescent circline and slimline lamps. It contains two dozen large architectural pencil renderings and 90 small lighting application and idea drawings. Six tables in the back of the book are specially designed to fit the needs of the theatrical industry and to aid in ordering lamps.

120—Tachometers. The Herman H. Sticht Co., Inc., of 27 Park Place, New York 7, New York, has recently issued condensed bulletin No. 1045 showing nine different types of tachometers which can be supplied by the Sticht firm. This bulletin shows a large amount of tachometers including portable and stationary types, single and multiple ranges, domestic and imported Swiss tachometers.

122—Connector Manual. Anderson Brass Works, Inc., Birmingham 1, Alabama, announce their new complete manual "Anderson Brass Connectors," Catalog 105, is ready for distribution. The complete line of Anderson bronze electrical connectors is discussed in up to date and specific facts. A detailed technical section—28 pages of tables, formulae, and information—make this a valuable, reliable data source for the electrical engineer. Dimensions and shipping weights are given on all items, and the manual is cross-indexed with items grouped alphabetically and pictorially by sections and types. The catalog is desk-size, measuring 9 x 11 inches, and containing 184 pages, permanently bound.

123—Window Fan. A new catalog, "Bar-Brook Window Fans" has been issued by the Bar-Brook Mfg. Co., Inc., 1553 Texas Ave., Shreveport, La. This catalog shows illustrations of the Bar-Brook design to be used in offices, apartments and small homes.

124—Midget Metal Base Relays. A new bulletin, No. 104, has been issued by the Ward Leonard Electric Co., 31 S. St., Mt. Vernon, N. Y. This bulletin describes how midget metal base relays are designed for use in small radio transmitters, aircraft control circuits and applications where space is limited.

125—Industrial Fluorescent Fixtures. Day-Brite Lighting, Inc., 5411 Bulwer Ave., St. Louis 7, Mo., has issued Bulletin 30-A which contains complete specifications for each type "Day-Line" industrial fluorescent fixture: single units and continuous systems for two 40-, three 40-, and two 100-watt lamps; detailed data on installation, accessories and servicing; list prices and charts for figuring foot-candle intensities.

126—Unit-Fans. A new 16-page booklet on unit-fans has been published by Reed Unit-Fans, Inc., 1001 St. Charles Ave., New Orleans 8, La. This booklet describes the design of the Reed reversible unit-fan and how by adding various attachments it serves all purposes and uses—for installation as a window fan, attic fan, portable floor fan, and all commercial exhaust fan installations.

127—Switch and Receptacle Plates. A catalogue page describing a new line of switch and receptacle plates of pure aluminum that can be painted over with wall paint has been issued by D & M Mfg. Co., 79 W. Peachtree Place, N. W., Atlanta, Ga. These plates are breakproof, rust-proof, and conform to rough walls.

128—Fluorescent Fixtures. An 8-page catalogue has been prepared by Mitchell Mfg. Co., 2525 N. Clybourn Ave., Chicago 14, Ill. The catalogue includes a complete description of the offices, stores, schools, public buildings, institutions, etc.

129—Anti-Corrosive Paints. Literature has been published by Subox, Inc., 348 River Rd., North Arlington, N. J, on their Subox and Subalox paints used in generating, transmission, and distribution construction and maintenance. Both paints are based on a colloidally dispersed and amorphos pigment of suboxide of lead which is so chemically active that weathering increases its rustinhibitive properties as well as its hardness.

130—Buzzer and Push Buttons. The Wm. J. Murdock Co., Chelsea, Mass., has prepared a catalogue page which shows actual size illustrations of their new "Tone-Right" buzzer and push buttons.

131—Lighting Bulletin. A 4-page bulletin (2169) describing briefly the various fluorescent and incandescent lighting equipment now being sold to the trade has been issued by Curtis Lighting, Inc., 6135 W. 65th St., Chicago 38, Ill. Individual specification sheets on various fixtures are included.

132—Controlling Apparatus. A binder including descriptive bulletins and listings on electrical controlling and distributing apparatus such as safety switches, light and power panelboards, switchboards, and bus duct systems has been published by Bull Dog Electric Products Co., Detroit 32 Mich.

133—Tru-Heat Automatic Iron. A specification sheet which completely tells the story of the new General Mills Tru-Heat Automatic Iron has been published by General Mills, Inc., Homes Appliance Dept., 1620 Central Ave., Minneapolis 13, Minn. This sheet gives illustrations of and describes the exclusive features of this iron which make ironing faster, easier, safer and better.

134—Terminal Lugs. A new bulletin, No. 8-DF, issued by Krueger & Hudepohl, 5 East Third St., Cincinnati 2, Ohio.

ELECTRICAL SOUTH,
1020 Grant Building, **May, 1947**
Atlanta 3, Ga.

Gentlemen:

Please send me bulletins indicated below.

No..... No..... No..... No..... No.....
(Print Plainly)

Name.....Title.....

Company.....

Address.....

City & State.....

illustrates the larger size terminal lugs and describes folding double cupped washer lugs with and without insulation grip, with large and small screw holes for standard stranded, extra-flexible stranded and solid wire specifications.

135—Hunter Ventilating Systems. A complete description of ventilating systems is given in the latest catalogue issued by Hunter Fan & Ventilating Co., 400 S. Front St., Memphis, Tenn. Illustrations and discussions on the belt driven exhaust fans, capacitor airspread fans, Deluxe oscillating fans, exhaust fans and ceiling fans are presented clearly in this catalogue.

136—Soft Soldering. The Lenk Mfg. Co., Newton Lower Falls 62, Mass., has recently issued a bulletin entitled, "Soft Soldering," which contains complete working instructions for home workshop soldering with all types of Lenk solder available to the home craftsman through various retail outlets.

137—Gorilla Grip Connectors. "Mechanical Principles of Gorilla Grip Electrical Connectors" is the title of the new 12-page booklet, No. 466, published by National Electric Products Corp., Chamber of Commerce Bldg., Pittsburgh. The booklet was compiled to assist engineers, jobbers, contractors and industrial purchasing agents in acquiring an exact understanding of the design and function of these connectors.

138—Electrical Fittings. A complete line of Gedney fittings which includes conduit bodies, as well as practically all fittings required for rigid conduit, armored cable, non-metallic cable flexible conduit and EMT installations is described in a folder recently published by Gedney Electric Co., R. K. O. Bldg., Radio City, New York, N. Y.

139—Electrical Apparatus. The Trumbull Electric Mfg. Co., Plainville, Conn., has recently issued a condensed general catalog, "Trumbullist", which gives complete information on electrical control apparatus.

140—Infrared Lamps. An 8-page folder, "Drying Problems Made Easy", listing the advantages of the Dritherm Carbon Lamps is available from the North American Electric Lamp Company, 1041 Tyler St., St. Louis, Mo. This folder includes a complete description of how Infrared Radiant Energy with Nalco Dritherm Carbon Lamps provides fast, effective heat.

141—Multiflex Brushes. The Helwig Company, 2544 North 30th St., Milwaukee 10, Wis., has just issued catalog No. 245 which lists brushes by code numbers. This simplifies the ordering of the proper brushes.

142—Sun Lamp Data Book. The "Answer Book", recently published by Sperti Inc., Cincinnati 12, Ohio, answers all questions about the sun lamp. Catalog sheets are also available on the portable model P-100 and the S-200 pedestal-style lamp.

143—Circulation Fans. Detailed folders are now available from The O. A. Sutton Corporation, Wichita 2, Kansas, on all of their models of the Vornadofan. These folders are well illustrated and give a detailed description of each unit.

144—Trilmont Electric Heater. This booklet tells the story of the recognition won by the Trilmont Products Company, Philadelphia, Penna., for their electric heater. This company won The National Safety Award which was presented by Lewis & Conger, of New York City.

145—Chromalox Range Unit. Construction details and parts lists for the Super-Speed and Hertflo range units are shown in Bulletin CF-145, available from Edwin L. Wiegand Company, 7600 Thomas Blvd., Pittsburgh 8, Pa.

146—Transformer Demonstration Chart. This chart shows how banked secondary transformers operate under overload or fault conditions. The chart, SA-900, is published by the Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

147—Monarch Electric Ranges. Data is available from Malleable Iron Range Co., 4861 Lake St., Beaver Dam, Wis., on all types of this company's ranges.

152—Lighting Fixtures. Bulletin No. 10, available from The Spero Electric Corporation, 18222 Lanken Ave., Cleveland 19, Ohio, is a four-page brochure showing electrical fixtures and materials for electrical construction.

153—Ventilators and Blowers. Performance data, dimensions, and specifications are all included in the well illustrated bulletins, now available from the Schwitzer-Cummins Company, 1125 Massachusetts Ave., Indianapolis 7, Ind.

154—Welding Exhausters. Bulletin No. 736 describes the Octopus, Jr., a portable exhaust unit, and the Octopus, a heavy duty unit, for applications requiring greater exhausting and blowing volume. Available from the Chelsea Fan & Blower Co., Irvington, N. J.

155—Lighting for Schools. "Recommendations for Classroom Lighting" is the title of this booklet which gives case studies of several lighting installations in schools. This bulletin is available from The F. W. Wakefield Brass Company, Vermilion, Ohio.

156—Electrical Apparatus. This 48-page illustrated catalog shows electrical solderless terminal lugs, solderless service connectors, fuse clips, and many other electrical items. Published by Ilsco Copper Tube & Products, Inc., Cincinnati, Ohio.

158—Attic Fans. This folder describes the Dana Deluxe Attic Fan and is issued by the George B. Klee Company, 3501-27 Colerain Avenue, Cincinnati 23, Ohio.

159—Renewable Fuses. Price list and specifications for Pierce fuses is available from Pierce Renewable Fuses, Inc., 211-219 Hertel Ave., Buffalo 7, N. Y.

160—Reactance Dimmers. Bulletin No. 74, issued by Ward Leonard Electric Co., 31 South Street, Mount Vernon, N. Y., describes in detail the Hysterset Electronic Control for the modern stage switchboard.

162—Junction and Meter Equipment. A series of bulletins describing junction boxes, telephone cabinets, metering equipment, etc., for indoor and outdoor applications, is available from the Walker Electrical Company, P. O. Box 8, Station D, Atlanta, Ga.

163—Metal Duct Housing. The first revision in five years of Catalog No. 445, describing and illustrating "4-by-4 Wirewa" has been completed by National Electric Products Corp., Chamber of Commerce Bldg., Pittsburgh 19, Pa. This re-issue gives electrical contractors, jobbers, engineers, and purchasing agents complete information on metal duct for housing and protecting electric wires and cables.

164—Bustribution Duct. This 23-page bulletin, No. 462, just issued by Bulldog Electric Products Co., Box 177, Detroit 32, Mich., describes in detail the Bulldog Feeder and Plug-In-Bustribution Duct for bus duct electrical distribution. The bulletin is profusely illustrated. The many drawings included show details of the duct, the various fittings, and the hangers, as well as diagrams of complete systems both of the centralized and decentralized system.

165—Lighting Research. The Benjamin Electric Mfg. Co., Des Plaines, Ill., has just published a new booklet covering the activities of the new Benjamin Laboratory. This booklet will be of special interest to all who are interested in the "behind-the scenes" portrayal of the research and testing which are essential to high quality and performance in lighting equipment.

166—Industrial Heat Lamps. The General Electric Company, Nela Park, Cleveland, Ohio, has announced the publication of a new industrial lamp folder. This folder, Y-689, contains six pages of photographs and technical data on the industrial heat lamps manufactured by the company.

167—Ventilating Fans. A new, 48-page manual to be used as a guide for dealers in the selection and installation of Silent Breeze ventilating fans for residential, commercial, and industrial applications, has just been issued by The Holcomb & Hoke Mfg. Co., Inc., 1545 Van Buren St., Indianapolis 7, Ind.

168—Electric Room Heaters. The Wesix Electric Heater Co., 390 First St., San Francisco 5, Calif., has informative data available on their Automatic Electric Room Heaters.

169—Materials Handling Hand Truck. A descriptive bulletin has just been issued by Handees Co., Dept. P, Bloomington, Ill., giving information about the company's line of hand trucks. Of special interest is the Model 88R, an appliance and refrigerator hand truck. This truck has a 1000-pound capacity.

170—Lock-Tite Pressure Connectors. The Thomas & Betts Co., Elizabeth 1, N. J., manufacturers of electrical fittings, has made available an illustrated folder describing their compact line of solderless pressure connectors.

171—Self-Supporting Cable. A new 52-page, fully illustrated manual on self-supporting cable has been issued by The Okonite Company, Passaic, N. J. Pertinent charts, tables and diagrams supplement the detailed descriptive matter answering the many questions which arise concerning the use of this type cable.

174—Aluminum Building Wire. Technical data on insulated aluminum building wire is now available in a bulletin designated as H-407 and available from Hazard Insulated Wire Works, Division of the Okonite Company, Wilkes-Barre, Pa. An insert gives comparative data on copper and aluminum conductors.

Anniversary Celebrated By BullDog Electric

THE BULLDOG ELECTRIC Products Company of Detroit, this year celebrates its forty-fifth anniversary.

BullDog was established in 1902 as the Mutual Electric and Machine Company, in Wheeling, West Virginia, manufacturing electrical control and distribution apparatus for the steel industry in the Allegheny Valley. The famous BullDog was then merely a trademark selected to convey the toughness and endurance of an early knife-type switch.

In 1915, the company moved to Detroit to better satisfy the fast-expanding electrical needs of the automotive industry. The company outgrew two plants in the next few years, and in 1923, moved to its present eight acre site at Joseph Campau Avenue at Dunn Road. In 1927, the trademark was graduated to company name; and the Mutual Electric and Machine Company became the BullDog Electric Products Company.

In the years immediately following, BullDog made a great name for itself in pioneering the prefabricated busway system for electrical distribution, called BUStribution Duct. It also introduced two complementary busway systems; Industrial Trol-E-Duct, which made it possible to safely power cranes, hoists and high cycle portable electrical tools "on the run"; and Universal Trol-E-Duct, whose continuous electrical outlet made it possible to add, remove or shift lights with astonishing ease.

During the war, BullDog was faced with an overwhelming demand for its busway systems; and these played an important role in arming the American industrial plant for war production, and in turning out war goods.

Postwar BullDog manufactures a wide range of electrical control and distribution apparatus; thermal circuit breakers, service equipment, safety switches, lighting panels, switchboards and several prefabricated busway systems for distributing power for lights and machines.

Now directing the company are William H. Frank, who succeeded his father, H. J. L. Frank, as president of the company upon the latter's death in 1939; M. C. Emery, executive vice-president; and J. J. Mitchell, vice-president in charge of sales.

Range Advertising Announced by NEMA

The Electric Range Section of the National Electrical Manufacturers' Assn. announced the first part of a long range industry promotion at the association's annual meeting held early in March, in Chicago.

"The initial objective" announced Roger Bolin, chairman of the NEMA electric range advertising committee, "is to prepare the way for 1,000,000 electric range installations each year for the next five years."

This industry program is carefully keyed to capitalize on the acceptance and the American housewives' demand for electric ranges.

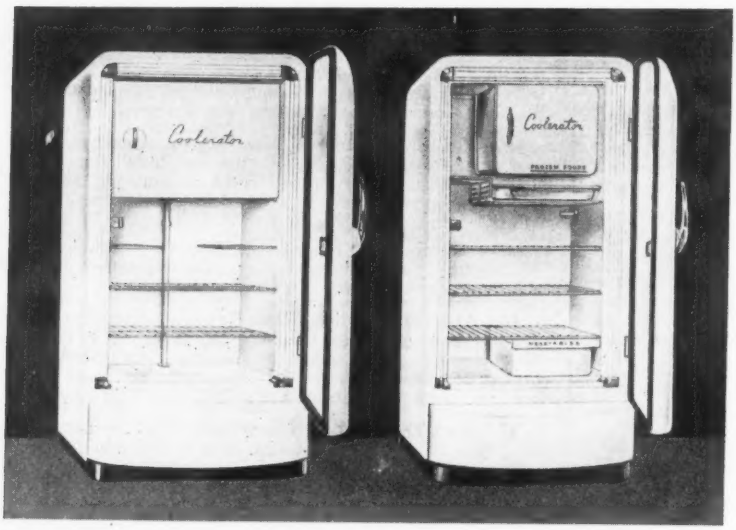
"One phase of our broad industry program," continued Mr. Bolin, "is to promote the electric range idea to the school and college home economists. Since most electric range manufacturers have plans of installing electric ranges in school laboratory kitchens, thousands of future homemakers are being taught the modern electric way of cooking. This will prove definitely beneficial to the appliance retailer because of the insistent demand by new housewives for a modern electric range."

To effectively reach the home economists, full-page advertisements are scheduled to appear in "What's New in Home Economics," "Practical Home Economics," and "Journal of Home Economics."

"Another part of the program," said Mr. Bolin, "aims to encourage the building profession to 'wire ahead' so that new homes will be wired for a modern electric range. When hundreds of thousands of new homes are adequately wired, the retailer's market for electric ranges will be broadened even further.

"To help the retailer prepare the way for greater electric range sales, we have developed a very complete book entitled 'Cooking Electrically.' Through simple, everyday, easy-to-understand language, this book tells the entire story of the ease with which the housewife can become a 'master chef' by cooking the modern electric way."

Mr. Bolin is manager of advertising and sales promotion, Appliance Division, Westinghouse Electric Corp., Mansfield, Ohio. The advertising agency serving the Electric Range Section of NEMA is the Ralph H. Jones Co., New York and Cincinnati.



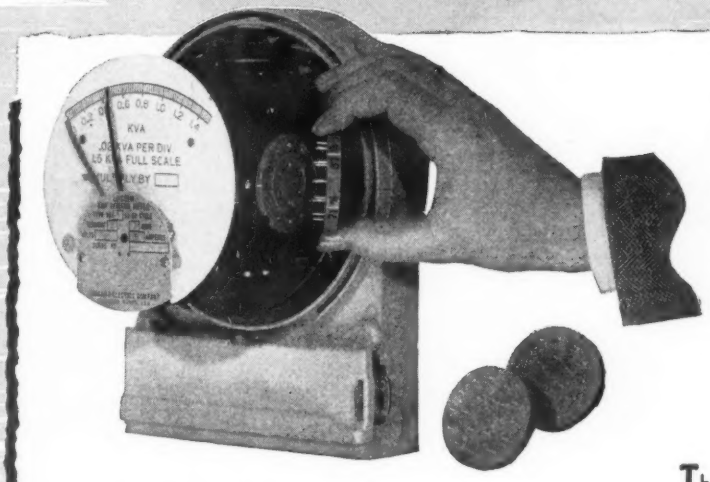
LOOK TWICE! IT'S A CONVERTIBLE REFRIGERATOR—Pictured at the left is the Coolerator C7 ice refrigerator. At the right is the same refrigerator converted into a DR70 electric unit, simply by installing a base platform and a "packaged" electric unit. Installation can be made right in the home by a dealer's service man in less than an hour. The converted model will have a built-in frozen food locker with a 25-pound capacity without disturbing the ice trays. The refrigerators are manufactured by the Coolerator Company, of Duluth, Mich.

Appliance Association Elects Cecil E. Kirby

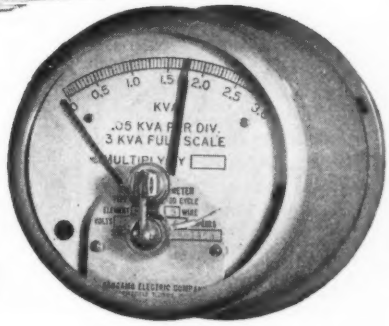
AT A RECENT MEETING of The Dade County Appliance Dealers Association, Dade County, Florida, Cecil E. Kirby was elected president. In his address at the meeting, Mr. Kirby said, "With the return of increased production and the greater availability of appliances to all dealers, we hope to adequately serve you with an association that will meet your needs as well as the education of the public."

announcing MEASURED DEMAND

WITH THE *New* SANGAMO-LINCOLN TYPE VA METER



Type VAP for bottom connection, illustrating phase-shift selector switch.



Type VAS for socket mounting.

The New Sangamo Lincoln Type VA thermal demand meters are now available for simple and economical demand measurement on a KVA basis.

Sangamo Type VA meters measure KVA on the well known phase-shifting transformer principle. In these meters taps from the potential windings are permanently connected to a simple selector switch in the meter by which the desired phase-shift is accomplished. The selector switch provides connections for measurement at either 87%, 71% or 50% power factor. A unity power factor connection is also provided for convenience in testing. The proper taps for any one of the power factors are all interconnected by a single movement of the switch.

Since no external phasing device is necessary with these meters, the total mounting space is no greater than that required for any conventional demand meter. The Type VA meters are made for 3-phase 3-wire, 3-phase 4-wire Wye or 3-phase 4-wire Delta circuits. Type VAP, for bottom connection and Type VAS, for socket mounting are of the indicating type. A graphic meter, Type CCVA, for bottom connection, is also available.

WRITE FOR LINCOLN BULLETIN No. M-7

SANGAMO ELECTRIC COMPANY
SPRINGFIELD • ILLINOIS

At the same meeting, Ed Rogers was elected vice-president, and Charlie McCarthy was elected to serve as treasurer. J. F. Myers was employed as executive secretary for the association and will maintain offices in the Pacific Building, 327 N.E. 1st Ave., Miami, Fla.

Universal Announces Eight Range Models

EIGHT OUTSTANDING range models, each designed to meet specific consumer demand, have been announced by H. M. Parsons, vice-president of Landers, Frary & Clark.

Under the banner heading of Speedliner Ranges, each of the eight models will feature the new Thermo-Chef auxiliary oven, which is heated by side wound unit and thermostatically controlled; the new super-heat monotube thrift units with multi-heat control which are faster and easier to clean; and a new large Tru-Bake automatic oven with positive heat control.

The Thermo-Chef auxiliary oven bakes, roasts, steams, and stews with automatic timing if desired, and is capable of cooking whenever large oven capacity is not required. The auxiliary oven is fully equipped with adjustable 2-layer cake or pie baking racks, trivet, 2-covered steaming pans with separate lift-out handles; wire mesh basket with cool bail handle.

One of the eight new range models just announced by Landers, Frary & Clark, manufacturers of Universal home appliances. A feature of this range is the Tel-a-Switch panel on the back splasher. Position of switches is identical with that of the units.

The Thermo-Chef offers a well cooker that is completely automatic with both time and temperature controls. It has a "look-in" lid with heat proof glass which permits a view of the operation.

The Super-Heat Monotube Thrift units result in high cooking efficiency. Made of the simplest construction, only one coil instead of two, they permit the coil to remain perfectly flat without warping or distortion. There is no anchorage or welding and they also give the great utensil contact area in proportion to mass; at the same time permitting heat to be more evenly distributed through-out the unit for the fastest possible heating. The Super-Heat Monotube Thrift units feature multi-heat control which gives any surface heat required to properly cook the food from a low simmer to a boil.

Stewart-Warner Names Texas Distributor

APPOINTMENT of the Beckham-Jackson Distributing Company, Dallas, Texas, as exclusive distributor of Stewart-Warner radios in Northeast Texas was announced recently by Floyd D. Masters, sales manager of the Radio Division of Stewart-Warner Corporation.

Organized in January, 1947, the Beckham-Jackson Distributing Company has its office and warehouse at 209 North Hawkins Street, Dallas. Partners in the new firm are M. O. Beckham, Jr., and Earl N. Jackson. The former is the son of M. O. Beckham, who for many years has been Southwest regional sales manager for Stewart-Warner.

SEPARABLE SOCKET TYPE
RLM STANDARD DOME

THREADED NECK TYPE
GLASS-STEEL DIFFUSER

FORMED NECK TYPE
DEEP BOWL

EASY DETACHABLE TYPE
ELLIPTICAL ANGLE

The Old Reli ABle

PORCELAIN ON STEEL "ABolite" REFLECTORS

Quality that meets every lighting requirement has always been the watchword of "ABolite" Reflectors. They are recognized throughout the lighting field for flawless construction, durability, ease of installation and maintenance.

A few of the standard types are shown. The complete "ABolite" line includes other types for outdoor use, protective lighting, sports and parking areas, filling stations and sign lighting. For every application where high efficiency with porcelain on steel enameled reflectors and floodlights is required.

ABolite Reflectors are sold exclusively through electrical wholesalers. Catalog for specifications sent on request.

Light right with . . .

A'Bolite REFLECTORS PORCELAIN ON STEEL

THE JONES METAL PRODUCTS CO., West Lafayette, Ohio

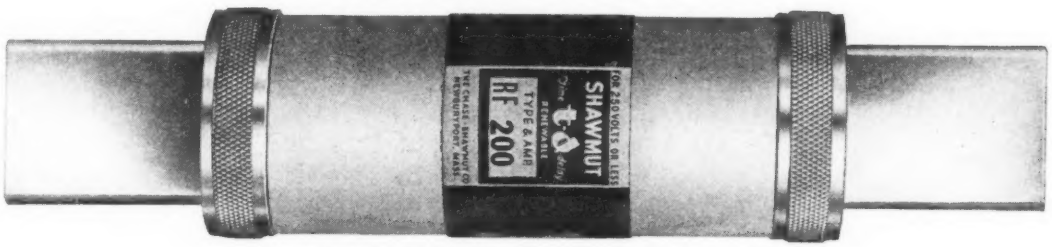
"All right, now, let's try that last paragraph again—and make it sound convincing this time."

A NEW FUSE!

Time t-d delay

RENEWABLE

TODAY'S SHAWMUT SHUR-LAG FUSE



Listed by Underwriters' Laboratories, Inc.

THE greatest progress in the renewable fuse in years. All parts are precision made and interchangeable. They can be completely disassembled and reassembled. With a supply of parts, you can assemble or refit your own fuses.

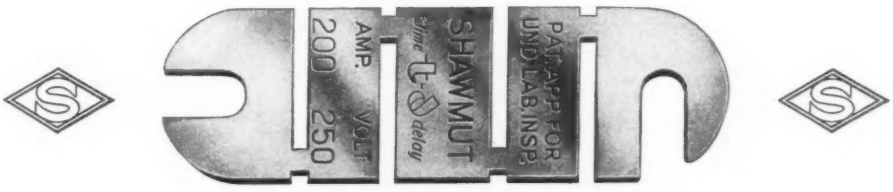
A T-D renewable fuse with a T-D link has the best time-delay characteristic of any renewable fuse, because it gives maximum time-delay in the higher current ranges where most needed, while still giving maximum protection in the overload zone.

It is the coolest renewable fuse, with the lowest heat and pressure when it blows. There are no steel parts. Ample metal surfaces, with high thermal absorption capacity, cool the gases generated by interruption.

On short circuit, the T-D link blows instantly on one notch, and the other notches follow in succession, operating like a four-step rheostat. This reduces the rate of rise in recovery voltage, and protects insulation and wiring.

The T-D is the simplest, sturdiest and most serviceable renewable fuse, and the easiest and speediest to renew. Only a pair of pliers are needed to renew it, after it has blown many times.

These are only a few of the advantages that establish the T-D in a place by itself among renewable fuses. Ask about them all. An inquiry of us or our nearest representative will bring you full information.



THE CHASE-SHAWMUT COMPANY, NEWBURYPORT, MASS.

Boston, New York, Syracuse, Cleveland, Philadelphia, Pittsburgh, Baltimore, Atlanta, New Orleans, Dallas, Detroit, Columbus, Indianapolis, Chicago, Omaha, Kansas City, St. Louis, Minneapolis, Denver, Los Angeles, San Francisco, Seattle.

Examining Boards To Be Investigated

A BILL was enacted by the North Carolina Legislature in April under which the governor is to set up a special legislative commission to investigate the State Board of Electrical Contractors and the other twenty examining and licensing boards in the state with a view of determining whether the boards have suppressed competition within their trades; whether any members have used their offices for personal benefit; whether the laws setting up the boards should be amended; and whether the boards should be continued or abolished.

A five-man commission, made up of legislators, will report its findings to the 1949 session of the Legislature after making a detailed examination of the books and records of all boards, finding out what proportion of applicants are licensed, how many licenses are revoked and for what reason, how many persons have been indicted or convicted at the instance of the boards for operating without license, how examinations are given, and to what extent the practices of the boards are not in public interest.

Introduction of the measure came after opinions were voiced by legislators at the number of such boards now existing and the number of requests by various other professions and trades for permission to set up additional such boards. There has been some sentiment toward the consolidation of several of the boards.

Only recently, a bill was introduced in the N. C. Legislature which would authorize the appointment of a "public member" to serve on each of the twenty-one boards to guard the public interests and require each board to submit a detailed biennial financial report. At present, all of the boards are made up solely of members of the trade or profession over which they exercise control.

American Central Issues Ad Booklet

ADVERTISING its advertising to distributor-retailer personnel is being vigorously pursued by American Central Division-The Aviation Corporation. Beginning in March, the company's 5000 odd distributors, retailers and key sales personnel received a brochure outlining the 1947 advertising program.

In thus merchandising its advertising program, American Central accomplishes several important missions. Distributor-retailer personnel are kept better posted in advance of plans for publicizing company products. A definite tie up of advertising and merchandise is established at the point of sale.

"In short," explains Charles Reinbolt, Jr., advertising manager, "We have, by this means, greatly increased the return from the expenditure of the advertising dollar. Placed in the dealer's hands these ads are serving a double purpose.

Westinghouse Expands Buffalo Facilities

PLANS TO EXPAND manufacturing facilities at the Westinghouse Electric Corporation's Buffalo, New York, plant have been disclosed by T. I. Phillips, vice-president.

The new operation, formerly a part of the Switchgear and Control Division at East Pittsburgh, will be known as the "Industrial Control Division." To facilitate the transfer, L. R. Ludwig, manager of the Motor Division, has been assigned responsibility for this operation in its present location. Operations at Buffalo will eventually include motor, industrial control, copper wire, and welding activities, and will be known as the Buffalo Divisions, rather than the Buffalo Motor Division. Mr. Ludwig will be manager of the Buffalo Divisions.

SAVE SERVICE CALLS

POPULAR BRANDS
BRUSH ASSORTMENT
This practical selection includes
CENTURY • DELCO • EMERSON • G.E.
LELAND • WAGNER • WESTINGHOUSE
18 Different Brushes
168 Pieces
List $63.50
$39.50 net

HARCO WASHER ASSORTMENT
FINEST RED FIBRE
1000 Washers
18 Sizes from ¼" to 1⅛"
$3.95

ELECTRIC MOTOR
BEARING ASSORTMENT
Only popular fast-moving numbers are in this excellent assortment
CENTURY • DELCO • EMERSON • G. E.
LELAND • SUNLIGHT • WAGNER •
WESTINGHOUSE
18 Different Bearings
152 Pieces
List $60.00
$39.50 net

HARCO EQUIPMENT CO.
2456 NINTH STREET, N. W. WASHINGTON 1, D. C.

"All I know is, it doesn't inhale anymore."

The 2nd International Lighting Exposition Announces

MERIT AWARD CERTIFICATES

for Electrical Contractors... Electrical Wholesalers... Architects...Utility Lighting Men...Consulting Engineers

on the Subject

"What Planned Lighting Can Do"

Offering Merit Award Certificates for Planned and Engineered Lighting Installations Completed in 1946 and 1947, plus 12 Gold Seal Awards of $100 each.

Closing Date: Sunday, August 31, 1947

DURING this year or last, you have doubtless had a part in the designing, planning or production of at least one industrial or commercial lighting or floodlighting installation that has proved exceptionally effective... an outstanding example of the benefits to be derived from lighting properly planned and installed.

It is to direct industry-wide attention to such achievements... to stimulate thinking along similar lines among the thousands who will attend the Exposition, that this competition on "What Planned Lighting Can Do" is sponsored by the 2nd International Lighting Exposition and Conference.

For you, this represents a unique opportunity to contribute to the knowledge of better seeing through better lighting. Further, thousands will see your entry on display at the Exposition and reported in the trade magazines, and thus you and your company will gain nation-wide recognition for your accomplishment.

4 separate competitions with opportunities for joint entries

There will be separate competitions for each of the following groups:

1. Electrical Contractors
2. Utility Lighting Representatives
3. Architects and Consulting Engineers
4. Wholesalers' Lighting Specialists and Salesmen

Thus, for example, Electrical Contractors' entries will compete only with submittals from other Electrical Contractors, Utility Men's entries will compete only with other Utility Lighting representatives' entries, etc. In addition, where the installation is the cooperative work of men in two or more of the above classifications, the entry may be submitted by the two or more involved, and entered in each of the applicable classifications.

Merit Awards and Gold Seal Cash Awards

From the entries received, the Board of Judges will select those which are judged eligible for Merit Award Certificates. All of these will be placed on exhibit at the Exposition. In addition, the judges will select the twelve judged best, three from each classification, which will receive Gold Seal Merit Awards of $100 each... a total of $1200 in cash prizes. Decision of the Board of Judges is final.

Send for Official Entry Blank and Rule Book

For an official entry blank and a copy of the rules, write or mail the coupon today. Along with rules will be sent helpful suggestions on the preparation of entries.

All entries must be postmarked on or before August 31, 1947—so MAIL THIS APPLICATION AND RULES REQUEST TODAY.

MERIT AWARD COMMITTEE
2nd INTERNATIONAL LIGHTING EXPOSITION and CONFERENCE
Room 818, 326 West Madison Street
Chicago 6, Illinois

At no cost or obligation to me, please send to the address at right an entry blank, rules and complete details of the International Lighting Exposition Merit Awards.

NAME_____

ADDRESS_____

CITY_____ ZONE_____

STATE_____

PLEASE PRINT PLAINLY

"Plan Tomorrow's Lighting Today" *at the* 2nd INTERNATIONAL LIGHTING EXPOSITION and CONFERENCE **Chicago, Nov. 3-7, 1947, Stevens Hotel.** *Sponsored by INDUSTRIAL and COMMERCIAL LIGHTING EQUIPMENT SECTION of the* **National Electrical Manufacturers Association**

Names in the News

The board of directors of the General Electric Company has elected **Edwin E. Potter** to the post of vice-president in charge of the commercial aspects of the company's relations with customers, succeeding Vice-President **Earl O. Shreve**, who continues as a member of the president's staff with special duties as assigned, it has been announced by **Charles E. Wilson**, president.

In his new capacity, Mr. Potter will direct the activities of the company's commercial vice-presidents in the field. His headquarters will be at 570 Lexington Avenue, New York.

Mr. Potter is a native of Tenafly, N. J. Prior to the new appointment, he was a commercial vice-president, having been elected to that post in March, 1945. Since that time he had been a member of the staff of the president, and responsible for co-ordinating the customer relations of all departments and affiliated companies

E. E. Potter

of General Electric in the District of Columbia, with headquarters in Washington, D. C.

Mr. Potter was associated for many years with the General Electric Lamp Department, and having held a variety of executive positions in that department and served on many of the company's important committees, he is widely known throughout all branches of the electrical industry.

* * *

Chelsea Products, Inc., Irvington, N. J., announces the appointment of **George J. Read** as general manager. He comes to Chelsea from Consolidated Edison Company of New York, where he was director of economic research. Mr. Read graduated from the University of Pittsburgh in 1924 with a Bachelor of Science degree in engineering.

In his new position he will be active in sales promotion, advertising, and management.

* * *

The L. R. Ward Company of Dallas, Texas, with branch offices in Houston, Texas, and Tulsa, Oklahoma, has announced the appointment of **Dan L. Colbath** as sales and application engineer. He will make his headquarters in Dallas but will assist the company's salesmen in the field in the promotion of some of their lines.

Mr. Colbath, a native of Dallas, is a graduate of Texas A & M College, and for the past five years has been with the General Electric Company in Schenectady, N. Y.

* * *

Ray W. Turnbull, recently elected a commercial vice-president of General Electric Company, has resigned as president of Hotpoint, Inc., G-E manufacturing affiliate. On September 1, Mr. Turnbull, with headquarters in San Francisco, will assume responsibility for customer relations in an area which includes California, Arizona, Utah, Nevada, and Hawaii, and parts of Idaho and Wyoming. In the meantime, his headquarters will be in New York.

* * *

At a recent meeting of the stockholders of The Wiremold Company, Hartford, Conn., **D. Hayes Murphy**, president, announced that two new members were added to the board of directors. They are **John David Murphy** and **Robert Henry Murphy**.

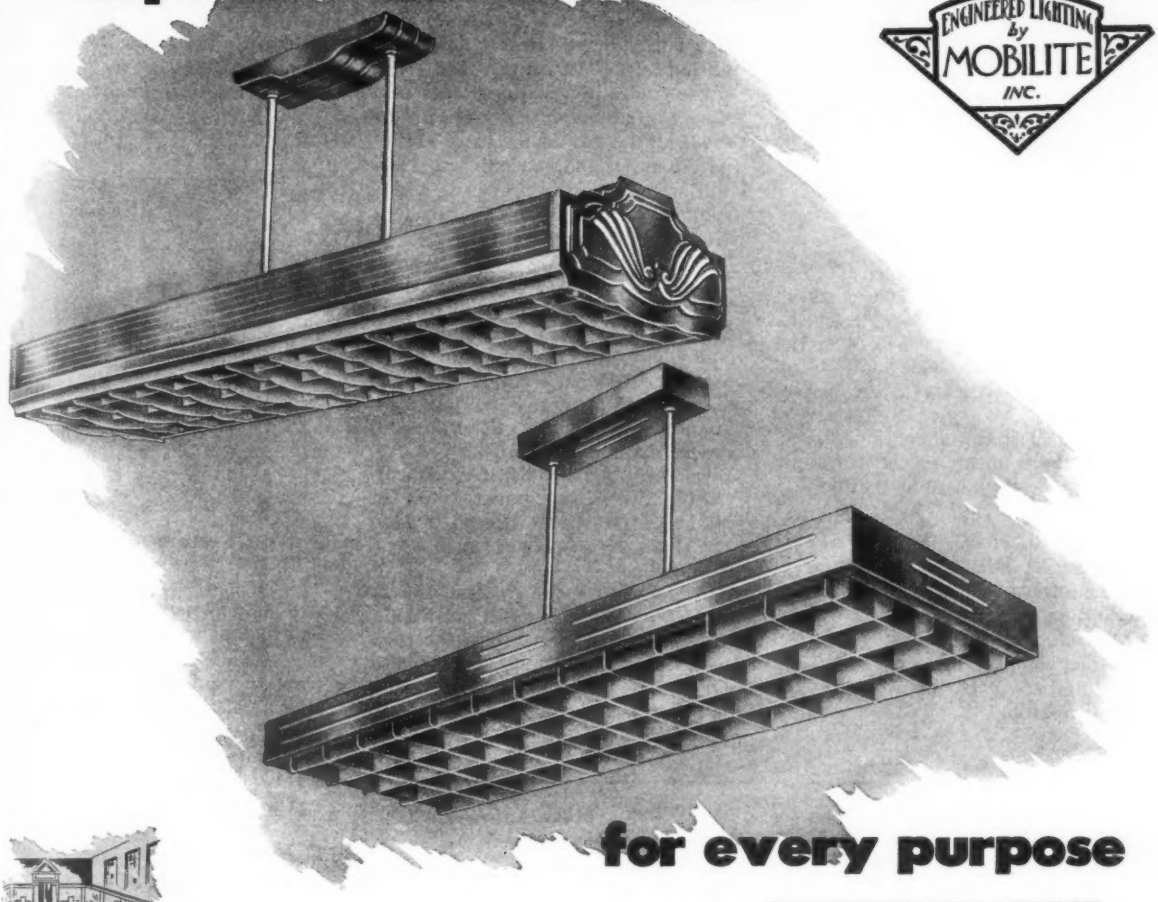
J. D. Murphy is vice-president and general manager of the company, while R. H. Murphy is serving as assistant treasurer and factory manager.

* * *

J. H. Pearson, Jr., Southeastern district manager for the Graybar Electric Company, has announced the appointment of **John W. Van Dorsten** as manager of the Graybar office and warehouse at Winston-Salem, North Carolina.

"Super-Vision" Mobiliers

ENGINEERED LIGHTING by MOBILITE INC.

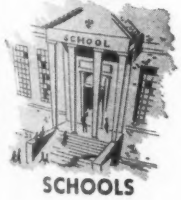


for every purpose

BANKS

OFFICES

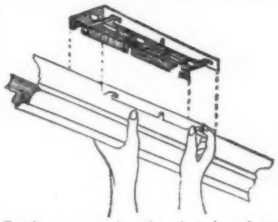
STORES



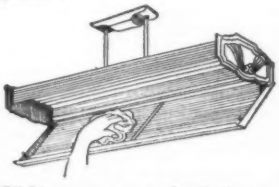
SCHOOLS

When considering a fluorescent installation look to Mobilite. The entire line of "Super-Vision" Mobiliers is constructed to give trouble-free service and designed to complement interiors. "Super-Vision" Mobiliers are available in types for every requirement . . . for offices, stores, smartly decorated salons, banks, schools, institutions. Ideal for high or low ceilings or under balconies. Standard attachments readily convert single units to a continuous run, flush or suspension, single or double stem. All the elements of modern design, highest efficiency, minimum maintenance, functional flexibility and superior craftsmanship have been incorporated in these high quality fluorescent units. Yes, look to Mobilite for your guarantee of the finest in fluorescent fixtures.

Write for Catalog S



Surface mounting bracket is adaptable to all "Super-Vision" Mobiliers. Fixture is easily slipped into firm position.



Slight pressure on spring button release at ends of unit permits ample opening for servicing, relamping and cleaning.

MOBILITE, INC.

Manufacturers of Fluorescent Lighting

JERSEY CITY 6, NEW JERSEY

Mr. Van Dorsten succeeds **W. A. Moorefield,** former Winston-Salem manager, who was transferred to Richmond some time ago as assistant to the Southeastern district manager there. During this time Mr. Moorefield has continued the supervision of Winston-Salem operation from Richmond.

* * *

Edward W. Fishburne, of Greensboro, N. C., has been appointed a representative by Regent-Savoy Electrical Manufacturing Corporation, 589 North Avenue, New Rochelle, N. Y. Mr. Fishburne will cover the territory of North and South Carolina and the northeastern part of Tennessee.

Robert T. Fife will continue to represent the company in the remaining part of the southeastern territory.

* * *

A. D. Robertson, formerly assistant manager of sales and engineering of the electrical section at the Norwood, Ohio, works of the Allis-Chalmers Mfg. Co., has been named manager of the company's Tampa, Fla., district office. He succeeds the late **Berrien Moore.**

Mr. Robertson joined Allis-Chalmers in 1938 following his graduation from North Carolina State College with a degree in electrical engineering. In 1939, he was transferred to the company's Washington, D. C. district office as sales engineer and in 1940, he was placed in charge of the marine motor and generator sales section at the company's main works in West Allis, Wis. He was named to his Norwood post in 1944.

* * *

Fay W. Wheeler has resigned as local manager for the General Electric Company's appliance divisions in Nashville to assume responsibility for heating device and fan sales in the southeastern district, it has been announced by **Charles R. Pritchard,** general sales manager of the G-E Appliance & Merchandise Department.

Mr. Wheeler's former duties in Nashville have been assigned to **Dorcey Hines,** local appliance manager in Birmingham.

A General Electric employee for 25 years, Mr. Wheeler was a heating device and clock specialist in the company's Atlanta, Tampa, and Dallas offices before he moved to Nashville. His new headquarters are in Atlanta.

The appointment of **Lewis W. Reynolds** as divisional sales manager for Majestic Radio & Television Corporation and Majestic Records, Inc., was announced this week by Parker **H. Ericksen,** vice-president.

Mr. Reynolds, who will cover the

Lewis W. Reynolds

southeastern portion of the United States, has wide experience in the radio and appliance field, having entered the industry in 1934 as appliance salesman for the Tennessee Electric Power Co., of Chattanooga. Subsequently, he was associated with several distributorships in the southeast as sales manager. Most recently he was with General Electric Supply Corp. at Atlanta as radio and record specialist.

* * *

Two new regional sales managers for Launderall have been announced by **Edward A. Ash,** director of the Appliance Division of the F. L. Jacobs Company, Detroit, Mich. The new sales managers are **James Kenneth Williams** and **Wilbur C. Buford.**

Mr. Williams, of Pontiac, Mich., will handle Launderall sales in the Southeast region. He formerly held positions with Parsons & Co., General Motors Truck and Coach Division, and the Detroit Edison Company.

Working out of St. Louis, Mo., Mr. Buford has been handling sales in the South Central zone. An Air Corps veteran, he has had wide experience in the home appliance business.

* * *

Three new district sales managers have been appointed by Federal Electric Products Company, Newark, N. J., **John C. Shaffer,** general sales manager, has announced.

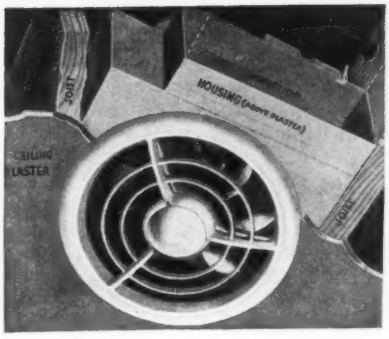
William M. Stark becomes manager of the company's Southwestern district, with headquarters in

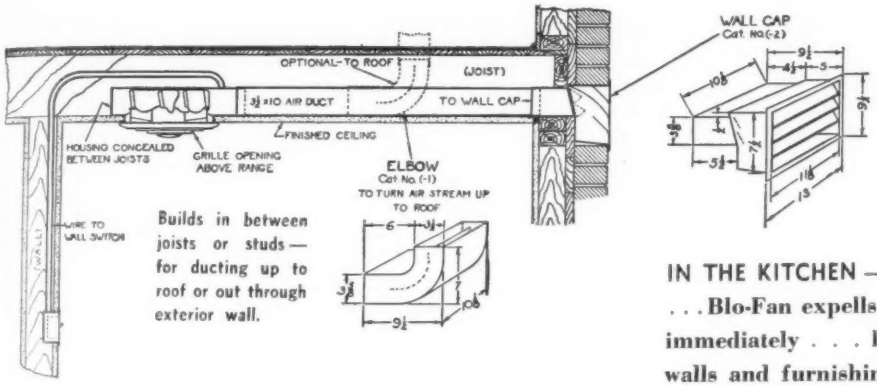
It's Easy
with
HYDEE HANGER
Just connect wires, screw to outlet box and your chain suspension fixture is hung – in a few minutes. All it takes is a screwdriver!
Complete with receptacle, two 5-foot chains, "S" hooks and cord clips. Fits standard 4" or 3¼" outlet box or plaster ring. Self-grounding – regular 2-wire cord and plug may be used.
$1.65 each list
Day-Brite Lighting, Inc., 5435 Bulwer Ave., St. Louis 7, Mo. Nationally distributed through leading electrical supply houses.
In Canada: address all inquiries to Amalgamated Electric Corp., Ltd., Toronto 6, Ontario.
*Patent No. D-141024, others pending. Underwriters approved.
321
IT'S EASY TO SEE WHEN IT'S
DAY-BRITE Lighting

Blo-Fan

"SPOT VENTILATION"

ELECTRIC CEILING VENTILATORS BRINGS EXTRA PROFIT





Builds in between joists or studs — for ducting up to roof or out through exterior wall.

Thousands of electrical contractors are installing Blo-Fan electric ceiling ventilators.

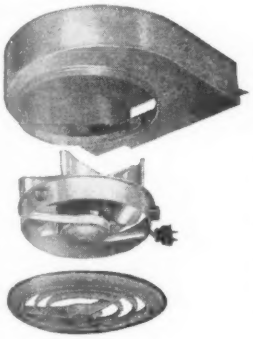
Here's why . . .

One Blo-Fan installation makes as much profit as 10 to 15 additional outlets . . . AND Blo-Fan makes friends of home owners.

IN THE KITCHEN — *directly over the range* . . . Blo-Fan expells greasy fumes and odors immediately . . . before they contaminate walls and furnishings . . .

IN THE BATHROOM — Blo-Fan eliminates embarrassment . . . prevents steam fogged mirrors and steam dampened walls . . .

IN THE GAMEROOM — Blo-Fan removes tobacco haze . . . does away with morning-after mustiness and odors.



THREE SIZES

No. 210 "DELUXE"—For large kitchens, gamerooms. Two-speed control — 136 watts — 500 c.f.m.

No. 208 "STANDARD"—For average kitchens, laundries, small offices, etc. — 58 watts — 300 c.f.m.

No. 206 "JUNIOR"—For kitchenettes, bathrooms, and other small rooms — 38 watts — 1.75 c.f.m.

Exploded View

Blo-Fan housing is roughed in like any fixture box. Motor and blade unit assembles into the housing without tools. The entire Blo-Fan fits flush with finished ceiling or wall, requiring only 3½" behind the plaster . . . only the decorative grille is exposed.

These franchised distributors now have Blo-Fan in stock:

ALABAMA
BIRMINGHAM — Mayer Electric Supply Co.
MOBILE — McGowin-Lyons Hdw. & Supply Co.
MONTGOMERY — Teague Hardware Company

ARKANSAS
HOT SPRINGS — F. C. Stearns Hardware Co.

FLORIDA
DAYTONA BEACH — Hughes Supply
GAINESVILLE — Baird Hardware Co.
JACKSONVILLE — General Electric Supply Corp.
Hajoca Corp.
Raybro Electric Supplies, Inc.
MIAMI — General Electric Supply Corp.
Raybro Electric Supplies, Inc.
ORLANDO — Hughes Electric Supply
PENSACOLA — Gulf Electric Supply Co.
ST. PETERSBURG — Raybro Electric Supplies, Inc.
TALLAHASSEE — McGowan Electric Supply Co.
TAMPA — General Electric Supply Corp.
Raybro Electric Supplies, Inc.
WEST PALM BEACH — McDonald Electric Co.

GEORGIA
ATLANTA — General Electric Supply Corp.
The Electric Supply Co.
AUGUSTA — Hart Electric Supply Co.
COLUMBUS — P. & W. Electric Supply Co.
MACON — Lowe Electric Co.

KENTUCKY
LOUISVILLE — General Electric Supply Corp.
Tafel Electric & Supply Co.
LEXINGTON — General Electric Supply Corp.

LOUISIANA
BATON ROUGE — Electrical Wholesalers, Inc.
NEW ORLEANS — General Electric Supply Corp.
Lighting Fixture & Electric Supply Co.
SHREVEPORT — General Electric Supply Corp.
Interstate Electric Co., Inc.

MISSISSIPPI
JACKSON — Electric Supply Co.
General Electric Supply Corp.

NORTH CAROLINA
BURLINGTON — Womack Electric & Supply Co.
CHARLOTTE — General Electric Supply Corp.
GREENSBORO — Johannesen Electric Co., Inc.
RALEIGH — Scott Parish Electric Supply Co.
WINSTON-SALEM — Lambeth Electric Supply Co., Inc.

OKLAHOMA
MUSKOGEE — Fullerton Electric Supply
OKLAHOMA CITY — Cook Electric Supply Co.
General Electric Supply Corp.
TULSA — General Electric Supply Corp.

SOUTH CAROLINA
CHARLESTON — Perry-Mann Electric Co.
COLUMBIA — Perry-Mann Electric Co.
SUMTER — Sumter Machinery Co.

TENNESSEE
CHATTANOOGA — General Electric Supply Corp.
Ramsey Electric Supply Co.
KNOXVILLE — General Electric Supply Corp.
Roden Electric Supply Company
MEMPHIS — General Electric Supply Corp.
Tenn. Valley Electric Supply Co.
NASHVILLE — General Electric Supply Corp.
Harris-Patrick Electric Supply Co.

TEXAS
ABILENE — General Electric Supply Corp.
Sun Electric Co.
AMARILLO — General Electric Supply Corp.
AUSTIN — Southern Electric Supply Co.
BEAUMONT — General Electric Supply Corp.
CORPUS CHRISTI — Corpus Christi Hardware Co.
DALLAS — General Electric Supply Corp.
Smith-Perry Electric Co.
EL PASO — General Electric Supply Corp.
FT. WORTH — General Electric Supply Corp.
Smith-Perry Electric Co.
HARLINGEN — Bush Supply Co.
HOUSTON — General Electric Supply Corp.
Southern Electric Supply Co.
Warren Electric Co.
LUBBOCK — General Electric Supply Corp.
Southwestern Electric Supply Company
SAN ANTONIO — General Electric Supply Corp.
Southern Equipment Company
WACO — General Electric Supply Corp.

VIRGINIA
DANVILLE — Womack Electric & Supply Co.
LYNCHBURG — Mid-State Electric Supply Co.
NORFOLK — General Electric Supply Corp.
Goodman Electric Supply Company
RICHMOND — General Electric Supply Corp.
Tower-Binford Electric & Mfg. Co.
ROANOKE — General Electric Supply Corp.

WEST VIRGINIA
CHARLESTON — Virginian Electric, Inc.

PRYNE & CO. INC.

LOS ANGELES 54, CALIFORNIA

NEW YORK • CHICAGO • SAN FRANCISCO

Louis; **George L. Stout** is the new manager of the East Central district with offices in Cincinnati; and **Clarence G. Landeck** becomes manager of the Middle Western district with headquarters in Chicago.

* * *

The Mitchell Manufacturing Company, manufacturers of lighting equipment in Chicago, announce the appointment of **Fred Masterson** as assistant sales manager. The general sales manager of the company, **Edwin A. Nickel,** states that Mr. Masterson has been previously associated with the Faries Manufacturing Company in the capacity of sales manager and his entire background and experience has been in the lighting field.

He is well known among electrical distributors and contractors, particularly in the Midwestern and Southwestern states, where he has served as sales representative. Mr. Masterson will devote his major efforts to field sales work among Mitchell's salesmen and distributors.

* * *

Two new sales representatives have been announced by the Railway and Industrial Engineering Company, of Greensburg, Pa. The new representatives are **George M. Meriwether** and **J. J. Butler.**

Mr. Meriwether, with headquarters in Birmingham, Ala., will cover the entire state of Alabama, eastern Mississippi, and northwestern Florida. For the past fourteen years, he has been a manufacturer's agent selling electrical and mechanical equipment. Associated with Mr. Meriwether is **Fred Henning,**

Mr. Butler will maintain headquarters in Dallas, Texas. His territory consists of the state of Louisiana and most of Texas. Mr. Butler is a graduate of Alabama Polytechnic Institute and, for the past thirteen years, was associated with Westinghouse Electric Corporation.

* * *

Leonard C. Truesdell is now vice-president in charge of marketing for Hotpoint Inc., Chicago, **James J. Nance,** newly elected president, announced recently.

This newly created position carries with it responsibility for all commercial phases of the company's operations, including that of general sales management.

here's how to
STEP UP SALES!
Tell your customers how SEPCO Electric Water Heaters keep hot water ready for instant use 24 hours a day. With Sepco there's plenty of hot water for baths, dishes, baby clothes, laundry and over a hundred daily home uses. SEPCO Electric Water Heaters are designed for long, trouble-free service with these 4 exclusive features—
Sepco HEATING UNIT
Sepco THERMOSTAT
Sepco DIFFUSER
Sepco FIBERGLAS INSULATION
Sepco REGISTERED
AUTOMATIC ELECTRIC WATER HEATERS
AUTOMATIC ELECTRIC HEATER CO., INC.
Offices and Factory • Pottstown, Pa.

News from the South

Birmingham, Ala.—The 13th annual convention of Retail Workers Assn. of Alabama will be held in Birmingham, May 21-23. Exhibits will include housewares, electrical appliances, building materials, etc. O. E. Owen, Fort Payne, Ala., is president of the association, and Mrs. J. H. Crowe, Birmingham, is secretary.

* * *

Birmingham, Ala.—The Birmingham Electric Show, which was formerly scheduled for April 5-17, has been postponed. According to Bob Hall, of the Steel City Supply Co., chairman of the committee in charge, the show will probably be held in the latter part of 1947.

* * *

Huntsville, Ala.—The Huntsville Electric System will construct 70 miles of transmission wires to serve new customers. Another 50 miles of line will be built in the Elkwood area at a cost of $60,000.

* * *

Arkadelphia, Ark.—Recently opened for business is the McMahan Electric Company. W. C. McMahan is the owner.

* * *

Hope, Ark.—Reduction of the residential rate of the municipal light plant has been announced by city officials. "This is a move to encourage the use of electrical appliances in homes," it was stated.

* * *

Little Rock, Ark.—A charter to manufacture clothes and dish washers and other electrical appliances has been granted to Modern Maid Sales & Manufacturing Company. The incorporators include J. H. Martin, A. F. House, and Charlotta Carr.

* * *

Little Rock, Ark.—The Arkansas Sound and Electronics Corporation was recently granted a charter to manufacture and install electrical and sound equipment. The following were listed as incorporators: S. Wood McArthur, Willis Townsend, and Gertrude Williams.

* * *

Bartow, Fla.—C. O. Barnes announces the establishment of a shop specializing in electrical maintenance and installation. Mr. Barnes, who has had thirty years experience in this type of work, has purchased a site on West Main Street for a permanent location. His temporary office is located above the Florida National Bank Building.

Quincy, Fla.—Leon W. Weaver has been made manager of Talquin Electric Co-operative. Mr. Weaver succeeds C. H. Bentley who resigned recently.

* * *

Atlanta, Ga.—Edwards-Harris Co., distributors of Deepfreeze home freezers, held their dealers' meeting recently in the Ansley Hotel. Approximately forty dealers from this trade territory attended the informative sessions, at which the 1947 line of Deepfreeze units was exhibited. T. F. Elrod, Deepfreeze southern regional sales manager, keynoted the morning session with an address directed to the dealer and his selling job. Jack W. Granade, general manager of Edwards-Harris, had for his topic at the afternoon session, "Sales Promotion."

* * *

Parsons, Kan.—The Keele Appliance Company held its formal opening at its new location on Main Street recently.

* * *

Phillipsburg, Kan.—The Newell Appliance Store announces that Ben Hall has been employed as a service man, specializing in domestic and commercial refrigeration.

* * *

Elizabethtown, Ky.—The Nolin Rural Electric Corporation plans to construct 189 miles of distribution lines at a cost of $300,000.

* * *

Glasgow, Ky.—Glasgow General Appliances, Inc., has been granted a charter to do a wholesale and retail business in radios, refrigerating, and heating equipment, and other household appliances. Incorporators are J. Mitchell Ellis, Nelle Terry Ellis, and Clyde Harris.

* * *

Louisville, Ky.—Supreme Appliance & Heating Company has been incorporated with capital stock of $15,000 by Delette Daykin Shepherd and William J. Benner.

* * *

Louisville, Ky.—E. N. Mimms Company has been incorporated to manufacture ventilating equipment. Incorporators include E. N. Mimms, Katherine G. Mimms, and Claude Mimms, Jr.

* * *

Broussard, La.—In a vote of 99 for and 13 against, Broussard's electric distribution system was voted sold to the Gulf States Utilities Company, with a 25-year electric franchise granted.

* * *

New Orleans, La.—With I. L. Bell as proprietor, Bell Radio Supply Co., a new wholesaler, has opened at

TOPS THEM ALL

FS-40
Automatic
STARTER
Pat. Nos.
2200443
2228210
Other Pats. Pend.

FEATURES

- Locks Out.. Resets Automatically.
- Most effective starter yet produced.
- Gives long life to ballast because defective lamp is locked out. Prevents overheating.
- The life of the AUTOMATIC starter is many times greater than that of average lamp.
- It saves maintenance costs and power consumption. Protects and insures longer life to ballast and lamp.
- Millions in use — Repeat orders prove trade acceptance.

No. 651
FLEX-LOC
Lamp Holder
PATENTED

FEATURES

- FLEXIBLE — Self-adjusting to variations in length of lamps. The ONLY lamp holder that flexes.
- AUTOMATIC LOCK—Lamps positively cannot fall out. Electrical contacts grip both sides of lamp pins.
- SIMPLE STREAMLINED DESIGN — No turning or twisting of lamps necessary.
- NO NEED TO CHANGE fixture layout. Engineered to fit all standard fixture spacings.

Lloyd
PRODUCTS COMPANY
Providence 5, R. I.
Branch Offices and Warehouse Stocks in 27 Leading Cities

LLOYD POLICY INSURES QUALITY

826 North Broad Avenue. Mr. Bell is well known to the trade throughout this area, having been selling radio parts and tubes to the radio servicemen in this section for the past 15 years.

* * *

Jackson, Miss.—The Hardin-Roell Furniture and Appliance Store has opened for business at 3019 North State Street. The new store will feature electric appliances as well as furniture. Bob Hardin and Harry Roell are the owners-operators.

* * *

Meridian, Miss.—Jesse K. Hagemeyer has opened the Radio Supply Company at 909 24th Avenue. The firm carries radio sets and parts, public address systems, and other radio and electrical supplies and equipment.

* * *

Canton, Mo.—Formal opening was held recently by the Canton Appliance Company, on Lewis Street. The new firm, owned by J. Andy Zenge, Jr., will carry a full line of electrical appliances.

* * *

Kansas City, Mo.—M. D. Leslie has been appointed as city electrical inspector, succeeding the late William L. Hutchinson. A graduate of Kansas University, Mr. Leslie has been in electrical work since 1910 and was formerly with REA as a designing engineer and with the United States Engineers since 1942 as a designing engineer.

* * *

Nevada, Mo.—Alterations are being completed on the new quarters of The C and E Auto Electric Service Company. The company is operated by Bert Edgar and C. Edwin Carlson.

* * *

St. Louis, Mo.—Wilbur C. Buford has been appointed regional sales manager for Launderall in the South Central region, with headquarters in St. Louis.

* * *

Asheville, N. C.—J. C. Richert, Jr., who has been operating superintendent for the Carolina Power and Light Company, in the Asheville area for the past three years, has been promoted to manager of divisions for the company's entire service territory. Mr. Richert will have his headquarters in Raleigh.

* * *

Charlotte, N. C.—The Charlotte Radio and Appliance Distributors' Association has just been organized "to bring together men in the industry to exchange ideas and to act as a medium whereby the wholesaler will know and understand his competitors." J. P. McMillan, president of the Southern Radio Corporation, is chairman of the new group; Joe Pleasants, Allison-Erwin Company, is vice-chairman, and Enloe McLain, Admiral Distributors, is secretary-treasurer.

* * *

Charlotte, N. C.—J. C. Geaslen, of Charlotte, has been appointed to the newly-created post of electrical inspector of Mecklenburg Company. Mr. Geaslen will have charge of inspecting all electrical wiring and other installations in buildings in the county outside the city limits of Charlotte.

* * *

Durham, N. C.—A charter to deal in electrical equipment has been granted J. E. Preslar & Sons, Inc. Incorporators are J. E. Preslar, M. J. Preslar, and J. N. Lasater.

* * *

Raleigh, N. C.—Cooper Starling is the new manager of the home equipment store here of Blackwood's, Inc., appliances, etc.

* * *

Duncan, Okla. — Neal's Home & Auto Supplies has beein incorporated with a capital of $25,000. Incorporators are Lynn Colbert, W. O. Neal, and C. D. Cund.

* * *

Oklahoma City, Okla.—Acme Appliance Company has been granted a charter by the Secretary of State. Authorized capital stock is $50,000. E. E. Pim, E. L. Thomas, and W. W. Spence were listed as the incorporators.

* * *

Vinita, Okla.—Vinita Tire & Appliance Company has just been organized by R. J. Wissinger and M. S. Harber, both of Shawnee, and Lee Gard, of Vinita.

* * *

Columbia, S. C. — D. H. Barwick, formerly associated with Burnett's Radio & Television Company, has opened the Barwick Radio & Appliance Company at 1218 Blanding Street.

* * *

Charleston, S. C.—Announcement is made by E. L. Godshalk, president of the South Carolina Power Company, that a 56-mile high tension line from Charleston to Yemassee will be constructed at a cost of $750,000. This line will serve five low country counties, including Beaufort, Jasper, Hampton, Allendale, and Colleton.

In these days of rising labor costs, savings are important somewhere along the line. And that's just where BLACKBURN Service Entrance Connectors work for maximum efficiency and economy. Their circular construction gives extra strength along the line of pull of the screw. What's more, BLACKBURNS are the *only* connectors made of DURONZE, which is over 50% stronger than hard copper or commercial bronze, commonly used in the industry. They will not stretch or distort—will not come loose. They're a QUALITY product—It pays to use them!

BLACKBURN Service Entrance CONNECTORS

*

OVER 100 CONVENIENTLY-LOCATED JOBBERS' STOCKS

BUILDERS OF QUALITY CONNECTORS FOR OVER 10 YEARS

JASPER BLACKBURN PRODUCTS CORP.

FIRST, MADISON & CLINTON STS. • ST. LOUIS 6, MISSOURI

Clinton, S. C.—With Hamp Boyd and B. C. Ferguson as owners, the Home Supply Company has opened in its newly remodeled building on Pitts Street. Electrical appliances, complete kitchen equipment, and household furnishings will be featured.

* * *

Spartanburg, S. C.—Wyatt's Music House, featuring radios, record players, etc., has formally opened in its new quarters at 115 Commerce St.

* * *

Knoxville, Tenn.—Serve-All Appliance Company has occupied its new quarters at 712 South Gay Street. The company has opened a "Music Bar."

* * *

Knoxville, Tenn.—With Bill Cason as manager, the Mid-South Supply Company has opened for business at 619 West Cumberland Avenue. The new firm is one of the largest exclusive lighting fixture distributors in the South, according to Tom McAfee, president.

* * *

Knoxville, Tenn.—The fourth store has been opened by Bob Guess Stores, Inc., which handle radios, small appliances, etc. The new store is located in Dandridge, Tenn.

* * *

Beaumont, Tex. — The Lamar Plumbing Company has opened in their new home at 1036 Calder Avenue. The new store will handle a general line of electrical appliances, such as electric ranges, heaters, refrigerators, etc., as well as small appliances of all types. The firm is headed by Jack Dillahunty, M. A. Humphries, and Bert H. Roberts. Mr. Roberts is manager of the new store.

* * *

Corpus Christi, Tex. — Radio men have organized the Corpus Christi Radio Service Dealers' Association here. Dale Giles is chairman and Orville Nicholson is secretary-treasurer. The purpose of this organization is to raise the standards of radio service in this city.

* * *

Houston, Tex. — Westinghouse Electric Corporation has announced plans for the construction of an office building, manufacturing and repair shop, and light manufacturing building, to cost $700,000. The new additions will increase the present production of the company's facilities in Houston by 25 per cent.

* * *

Tenaha, Tex.—The Adams Appliance Company, recently opened for business, will handle a complete line

America's finest wholesalers

sell the ROYAL line to

America's finest retailers

ROYAL

WRITE FOR CATALOGS

Quality WIRE • CORD SETS
CARTRIDGE and PLUG FUSES • FUSTATS
TROUBLE LIGHTS • CHRISTMAS LIGHTING SETS

ROYAL ELECTRIC CO., Inc., PAWTUCKET, R. I.

of home appliances, according to Ray Barton, the store manager.

* * *

Salem, Va.—The Butner Plumbing & Heating Appliance Store has now opened for business at 209 College Avenue.

* * *

Charleston, W. Va.—D. C. Morrison Refrigeration Company, Inc., has been formed with capital stock of $50,000 to install refrigerating plants. D. C. Morrison, of Belpre, Ohio, Roy B. Rollins and Chester O. Williams, both of Charleston, were listed as the incorporators.

* * *

Kanawha, W. Va.—With a complete radio and record department, the Village Appliance Company has opened at 3720 McCorkle Avenue.

Fight for Free Enterprise Urged

(*Continued from page 49*)

in an area touching six states, he indicated that progress was being made in the company's fight against this needless dpulication of facilities. A contract has been signed with REA for wholesale electric service from the interconnected business-managed companies, and it now appears that the possibility of the SPA getting approval for a duplicate transmission system is materially reduced.

Although there are decided dangers in the present economic situation, a recession is not inevitable in the opinion of Howard R. Bowen, economist for the Irving Trust Company, of New York City, who addressed the conference on "The Economic Outlook."

Mr. Bowen declared that because of a growth factor the business outlook for the South is more favorable than for the country as a whole, and also more favorable to electric power production than production generally.

He based his opinion, he stated, on the fact that although booms such as American business is today enjoying have always culminated in recessions, there are important favorable elements that might modify these consequences.

As indication that we are approaching the end of an inflationary period, he stressed the following:

Production greater than flow of goods to users.

Decline in spending for non-durables.

Private net exports leveling out.

New orders declining.

Construction activity hesitant.

Slackening rate of increase in capital expenditures.

Federal budget near balance.

Future's prices below spot prices.

Widening spread of yield between high and low grade bonds.

Indifferent stock market.

Three Basic Factors

Present in the current situation are three strategic factors, Mr. Bowen said, which could produce considerable recession. They are: (1) the coming reduction in government expenditures; (2) the probable decline in consumer spending for non-durable goods; and (3) the probable termination of inventory accumulation.

Should these three factors become effective simultaneously, they might bring about a decline in business activity of as much as 20 per cent, and even initiate that decline within the third quarter of this year, the economist asserted.

Favorable elements cited by Mr. Bowen were:

1. Possibility that the unfavorable factors might not become effective simultaneously.

2. Cushioning effect of individual savings, unemployment compensation, resistance to wage cuts, government support of agricultural prices, possible tax reduction and increased spending by the federal government, and an increase in foreign and domestic buying stimulated by falling prices.

Difference between the present situation and that which prevailed in 1919-20, Mr. Bowen pointed out, is that the price level is now substantially less and there is less inventory speculation. Interest rates, moreover, are low today, there is no foreseeable credit stringency, individuals, and business are in a stronger liquid position and are entirely conscious of the danger due to the previous experience. He urged his hearers, however, to be on guard against "the comfortable view," that only mild and brief "corrective recessions" lie ahead.

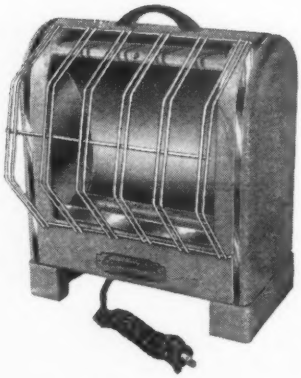
A challenge to business men to "unsheathe your sword and enter the conflict" to preserve the system of free enterprise was issued by Clifton A. Woodrum, president of the American Plant Food Council, Inc., former judge and for 23 years a member of the house of representatives, speaking at the annual banquet of the Southeastern Electric Exchange.

Mr. Woodrum warned of "the danger" of government competition with

Dealers' Choice!

Economaster

ELECTRIC HEATERS



With dealers everywhere, it's Economaster Electric Heaters, because Economaster sells faster. Economaster Heaters are the dealers' choice because they're the customers' choice. (Fast approaching the million mark.) Simple, attractive construction for faster heat at lower cost. Fully guaranteed.

Interested Distributors Write

ECONOMASTER SALES, Inc.

128 8th Ave., N. Nashville, Tenn.

private business which, he asserted, has grown to an extent "that can hardly be appreciated by anyone not directly in the line-of-fire."

He referred particularly to the utility industry of America and the "working over" it had been given by Uncle Sam as a competitor. Period of greatest growth in the privately-owned public utility field, he said, was from 1920 to 1940. This fact, he declared, refuted the argument, so often advanced to justify government incursions into private business, that it was necessary because private enterprise was falling down on the job.

Notwithstanding this unprecedented expansion by private industry, which amounted to 300 per cent, he said, publicly-owned establishments increased output 900 per cent.

"Comparing capacity of generating plants alone, the privately owned establishments increased their capacity 260 per cent, while public-owned capacity increased 880 per cent, or three times as fast," Mr. Woodrum told the assembled utility company executives.

A tendency on the part of many persons to think of the nation's electric companies as outside the orbit of the American competitive system, he said, was false and an exceedingly dangerous thought pattern. If industrial rates charged by the electric company are out of line, he pointed out, industrial customers can always build their own plant and generate their own power.

With regard to the fertilizer industry, which is his special field, Mr. Woodrum said that "if the government will only let us alone, the American farmer will get the plant food he requires quicker and at reasonable prices." He appealed to the delegates to make known their wishes to their elected representatives.

Utilities' Largest Customer

The concluding session was opened with an address by Ward Delaney, president, Institute of Textile Technology, Charlottesville, Va., on the relation between textile industry and electric power.

"Textile industry ranks first in number of electric motors and fifth in horsepower, he reported. In the Southeast, the textile industry is the largest single customer of the light and power companies and 85 per cent of their power is purchased power.

To secure the future, the textile industry is now "research minded." Mr. Delaney pointed out some of the possibilities of the future such as removing cotton from seed by acid and the transporting cotton fibers by pipe-

BRASS

Plays a Tune of ECONOMY *and*
BETTER HEAT
DISSIPATION
in

Monarch *Renewable*
Fuses

- Completely Approved
- Complete Line of Knife and Ferrule Types
- Simple to Renew

Sold by Leading Wholesalers Everywhere

BUILT WITH AN ADEQUATE AMOUNT OF BRASS

Specify Monarch Fuses *for improved*
FUSErvice

MONARCH FUSE CO., LTD.
118 E. FIRST ST., JAMESTOWN, N. Y.

line with elimination of baling.

The Institute is contributing toward this research by training men specifically for the textile industry; by assembling the most complete library in the world on the industry; and by co-operating with other research organizations.

Work of the Institute includes fundamental research as well as academic research by students for graduate theses; industrial projects for industry as a whole; and specific projects for individual companies. As typical examples of what is being accomplished in individual projects, Mr. Delaney mentioned one company which is saving some $13,000 a year from a project that cost only $275, and another company which spent $3,200 for a project that now saves $57,000 per year.

He discussed at considerable length the possibility of using high frequency drying and indicated that this research would be conducted with a full-size practical installation eventually.

"Everybody Wants to Get Into the Act" was the subject of a discussion on public relations by C. J. Allen, vice-president, The Connecticut Light and Power Co., and president of Public Utilities Advertising Association.

Most important job ahead for the public relations department is to provide workers with accurate information about the company and its policies. Only a comprehensive program can overcome the condition that has led to a situation such as indicated by a recent survey that 39 per cent of the employees of the light and power industry favored the TVA development, or such mistaken ideas as those relating to industrial company profits —one survey indicating that the average employee thought that the average profit was 25 per cent of gross income.

Mr. Allen emphasized that the company's employee publication is the most effective medium for informing workers about the company.

One of the principal defects of such papers is that they are written at a level above the average worker's ability to understand.

Other important fields of operation for the public relations staff are the stock holders and that small group of customers that do not pay their bills on time.

In conclusion, Mr. Allen summed up his ideas as to the qualification of an ideal public relation executive:

1. Must know his business.
2. Must know that he knows his business.
3. Must be at management level.
4. Must be a master at presentation.

Of all of these, he named the last as most important since the ability of the public relations executive to present his ideas to management determines whether or not the program gets the "go-ahead" signal.

The "buyers' market" lies closer ahead than most of us realize said J. M. McKibben, assistant to vice-president, Westinghouse Electric Corp. in his talk "From a Sellers' to a Buyers' Market."

Mr. McKibben offered six recommendations to the light and power companies:

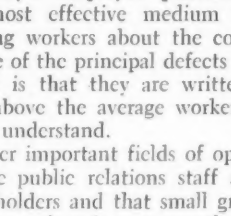
1. Direct your first and most powerful effort at improved labor relations. The time has come for a program of selling "Togethered mindedness."
2. Recruit adequate manpower for the sales job ahead.
3. Speed the break-in training of your sales manpower by modern visual methods.
4. Make your break-in training orderly.
5. Make your training continuous —without seeming repetitive.
6. Train your customers as well as your salesmen.

McGregor Smith, president of Florida Power and Light Co., was elected president of the Southeastern Electric Exchange at the concluding session. Other officers elected included M. C. Funk, Appalachian Electric Power Co., first vice-president; W. M. Rogers, Birmingham Electric Co., second vice-president; S. C. McMeekin, South Carolina Electric and Gas Co., third vice-president; and John W. Talley, of Atlanta, re-elected executive secretary.

"EFFICIENCY" DEVICES FOR CONDUIT AND CABLE SUSPENSION

EFFICIENCY CONDUIT HANGERS
for
INDUSTRIAL CONSTRUCTION

• The most practical and widely adaptable hanger ever devised for supporting conduit or armored cable on open steel construction. Will carry pipe at any angle to beam.



Highest grade malleable iron, guaranteed against breakage. Set screw, cup pointed, tightened by free nut, plus 5-point radiating ridges of gripping surface holds pipe on true mechanical principle, guaranteeing a solid, non-slip support.

Write today for your copy of EFFICIENCY Catalog No. 388.

CAT. NO.	FOR PIPE AND CABLE SIZES
F379	For armored cable
F380	For ½" and ¾" conduit
F381	For 1", 1¼" and 1½" conduit
F382	For 2" and 2½" conduit

Efficiency
ELECTRIC AND MANUFACTURING CO.
EAST PALESTINE, OHIO

MANUFACTURERS OF EFFICIENCY ELECTRICAL DEVICES FOR CONDUIT, WIRE AND CABLE SUSPENSION

Learning to Sell Again—Part 3

(*Continued from page 46*)

customer's lack of information or her misunderstanding of the feature in question. You can usually clear things up for her with a little patience and tactful explanation.

For instance, she may say "But your refrigerator doesn't have 14 different kinds of cold like the other refrigerator has."

This calls for a simple explanation of the fact that the temperature control dial is similar in function to the handle on a faucet. There's no dial on the faucet, yet you can turn it to

get any amount of water you want.

The temperature control dial on your refrigerator could have 14 marks or "notches" or even 114 if the manufacturer thought it desirable, but the end results on each end would remain the same. The dial is simply a method of control.

Your prospect will like you and your product better after you have given her helpful, clarifying information of this sort. To be ready for emergencies of this kind, you must, of course, know a lot of things about your product which you might not ordinarily use on the average prospect.

Some folks may toss competition at you just to needle you, but don't let anybody or anything get you into an argument. Just come back amiably with facts.

And remember that not every product has every feature. Concede the other product a virtue or two, and if your prospect likes one thing on a competitive product better than a comparable feature on yours, smother her with other selling points on your own.

(C) Use the "Yes-But" technique. See your customer's point of view—admit its reasonableness — agree — say "yes"—then add "but."

They tell of an automobile salesman who was selling a car whose design many people disliked. When a customer objected to the car's looks, the salesman would say "Yes, I can see why you don't like this rather advanced design. There are certain things about it that *I* don't care for very much myself. *But* there are some other features which in my opinion far outweigh . . . " and he went on to cover many fine features which the car did have—and he made many a sale.

If you are selling an electric range, and the prospect says she prefers the appearance of a competitive make, say something like, "Yes, Mrs. Henry, I can see why the appearance of that range appeals to you. However, (meaning *but*) here are some features of design on this model which are exclusive and most desirable."

You've granted she has good taste, and she'll be all the more likely to grant you have a good range.

Sometimes you can even use an objection to help you step your customer up. For example, if you're showing a refrigerator and Mrs. Henry says the model you are showing seems to have more capacity than she may need, wade in! You can say, "Yes, Mrs. Henry, that might seem to be the case, unless you remember that one important advantage of a refrigerator is to be able to store plenty of food

Defy Heat!

Heat holds no terrors for the "fire-eater" — or for Collyer Asbestos Wires. The heavy overloads and hot locations that break down ordinary insulations do not affect Collyer asbestos. Where moisture, corrosive vapors, and heat up to 230° F. are expected, Collyer Asbestos Varnished Cambric (A.V.C.) insulation is recommended. Made by improved methods, with new non-toxic resin impregnating compounds, this wire is ideal for control and power circuits in steel mills, foundries, mines, and boiler rooms, for voltages up to 7500. Collyer All-Asbestos Wire withstands extreme temperature, up to 400° F. under dry conditions, on rheostats, control panels, heating equipment, etc., and gives maximum protection against overloads or high ambient temperatures.

Write for information

Collyer INSULATED WIRE CO.

243 ROOSEVELT AVE., PAWTUCKET, R. I.

Southeastern Sales Representative: FULWILER & CHAPMAN, ATLANTA, GA.

IDEAL

Wire-Nuts*

(THE SOLDERLESS, TAPELESS WIRE CONNECTORS)

Thousands of electrical contractors have proved to themselves how "Wire-Nuts" save money and speed work on rough-ing-in fixture wiring, maintenance, repairs, etc. Try "Wire-Nuts" on *your* next job and be convinced.

Just one simple operation is all that's required to join any usual combination of wires with a "Wire-Nut"—no twisting of wires—no soldering—no taping. You do it faster and easier, at the same time making a joint that's better electrically, stronger mechanically; safe, neat, compact, non-corrosive. Ideal "Wire-Nuts" are listed by Underwriters' Laboratories. BUY "WIRE-NUTS" FROM YOUR JOBBER NOW.

IDEAL INDUSTRIES, Inc.
Successor to Ideal Commutator Dresser Co.
1017 Park Ave., Sycamore, Ill.

*Trade Mark Reg. U. S. Pat. Off.

Mail for FREE SAMPLES

IDEAL INDUSTRIES, Inc.
1017 Park Ave., Sycamore, Ill.
Send Free Samples, Application Manual and cost data.

Name_____

Address _____

City_____ Zone___ State_____

and eliminate the nuisance of frequent marketing."

You've agreed with her, but you've made a point with which she can agree, and you've also appealed to one of her major buying motives: the economy motive.

You may even be able to get her to buy a bigger model than the one you're showing her. And this same technique may work in stepping them up on ranges and other things, too. Regard every objection as your *opportunity*.

9. Watch for closing signals. A customer may be ready to buy long before she says a definite, "I'll take it." Watch closely for any hint that she may be ready for the close, and when she is, move in!

For instance, if you are showing the freezing unit of a refrigerator and have mentioned the ease of making frozen desserts, and she says her family is very fond of frozen desserts, *that* may be your closing signal.

Or, if she drops a hint that she is having a dinner party on Thursday, move in and suggest how the new refrigerator will contribute to the party's success, and how proud she'll be to show it to her friends.

Or, if you are showing the shelf arrangement and she tells you she has never had a refrigerator with a satisfactory shelf arrangement, *that* is a closing signal.

Watch for closing signals!

10. Use a "trial close." It's always a good idea to sell as soon as you can. The longer you let your prospect delay, the more chances you take that something may come up to upset your apple cart.

There's many a slip 'twixt the cup and the lip. All of a sudden your prospect may remember an engagement. The phone may ring and remind her she must call somebody. She may remember her car is parked in a limited parking area, and from that moment on, she may not hear a word you say.

So, as soon as possible, try "trial closes." You can do this after any "yes" from a prospect. And you can do it even when no closing signal has been given.

You may say, after some agreement: "Mrs. Henry, this model seems to fit your needs exactly. We have it in stock and can make prompt delivery. Why not let me send it out tomorrow? Would you prefer to pay cash, or would extended payments be more satisfactory?"

These trial closes will do no harm. If they do not get the order, they will at least enable you to do a little "progress checking."

Do not wait too long to try your trial closes. They may help you to land the order before your customer has fluttered out of your life.

11. Be thorough. If you tell a prospect *everything* you know about your product, it might take several times as much time as she can spare.

So, you will have to be your own judge as to how much of her time to take (and of your time to give).

But it does pay to be as thorough as possible, or you may skip something that might sway a sale.

One refrigerator salesman thought he had sold his own aunt a refrigerator, but was surprised to find later that she had bought another make . . . because it had a little electric light inside!

He had taken it for granted that she knew that all recent models of electric refrigerators had lights, and so had neglected to mention the light in his.

But, where to draw the line?

In general, cover in broad outline every important product detail and feature unless you get a closing signal or unless a trail close reveals it is time for you to knock the order off.

If you've covered the ground broadly without sign of a "yes", then dig in and ask questions and try to learn what obstacles may still exist in the prospect's mind.

Maybe you've missed some little feature which is holding up the "yes" —something as simple as that little interior light.

How thorough to be? Your selling should be thorough enough to make the sale.

There's another sense, too, in which you have to be thorough. Have you—

1. Learned *all the facts* about your product?
2. *Classified* your prospect?
3. *Obtained the prospect's participation?*
4. *Listened* intelligently?
5. *Stuck* to your presentation?
6. Made sure the prospect *understood?*
7. Encouraged *agreement?*
8. Handled *objections* skillfully?
9. Watched for *closing signals?*
10. *Used trial closes?*

If you have, we tell the new salesmen, you should have smooth sailing in your selling.

To the old hands at the selling business, this review has a nostalgic ring —it's fun to get back to selling once more. And, no one knows better than the experienced man that all of us are having to learn how to sell all over again.

Promoting Safety Through Training

(Continued from page 42)

than five per cent.

Men returning to the field from this training have qualified in almost every case as good and safe workmen and have been reclassified to higher-ranking types of work within a reasonable length of time. Co-operation in the field among supervisors and foremen has been excellent, and it is agreed throughout the company that the step has been a progressive one. We fully recognize specialization in this field as paramount. Without a doubt this training will bear directly in years to come on reducing the frequency and severity of accidents among line crews.

It is significant that requests are already being made in the field to expand the training to assist servicemen, journeyman linemen, and in some cases, new foremen. The possibilities are, indeed, broad.

Package Substations Simplify Planning

(Continued from page 43)

dure keeps the system investment very closely in line with the actual load requirements.

At the present time, package substations are rated from 750 to 45,000 kva (11 to 69 kv incoming and 2.4 to 13.8 kv outgoing), and in addition to the factory-assembled unit substation include: steel structure, lightning arresters, high-voltage metering and relaying instrument transformers, outdoor oil-circuit breakers (or fuses), disconnecting switches, station lighting, relaying as required, control cable, and wiring diagram.

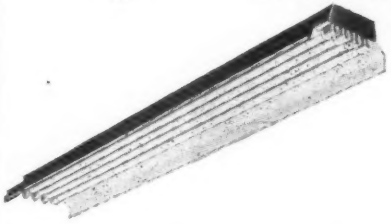
Helps System Planning

Utility engineers who have collaborated on studies in the power distribution field stated that the incorporation of package substations will bring about better correlation with over-all system planning by facilitating the choice of system and substation to give the desired quality of service at the lowest possible cost. They believe that one reason this desired objective has not been universally attained is because of the almost infinite number of possible system-substation combinations. Although variations are possible with package substations, both utility engineers and G-E engineers believe that package substations will help standardize "system-substation" combinations by permitting more emphasis on overall planning programs to evolve the best

Laurelite

SLIMLINE FIXTURES

GIVE *Fluorescent Lighting* THAT'S ENGINEERED *for* EFFICIENCY



- Efficiency in high-level illumination
- Efficiency in ease of maintenance
- Efficiency in speedy installation

SATISFYING the demand for more efficient fluorescent lighting, "Laurelite" Slimlines are immediately available in popular channel style, and orders can be filled promptly for industrial and commercial reflector styles.

WRITE TODAY FOR PRICES AND CATALOGS

Check "Laurelite" too, for residential, commercial, and industrial fixtures using the conventional 20, 40, and 100 watt fluorescent tubes. Wide variety, beautiful design, quality construction, low price, and IMMEDIATE DELIVERY.

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Atlanta Office: C. R. Dudley, 1278 Lucille Ave., N. W.
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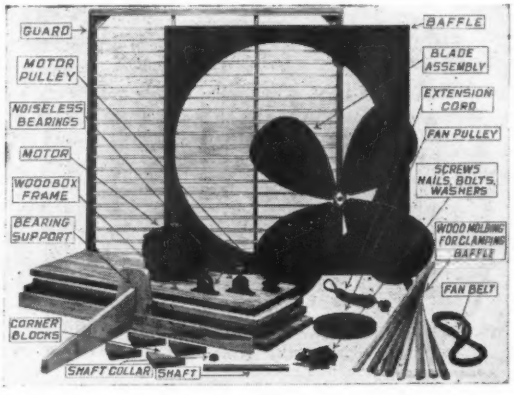
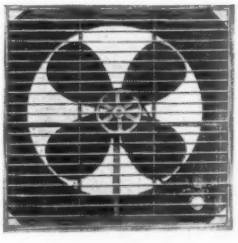


DIRECT from FACTORY to DEALERS

Easily-Assembled WINDOW FAN



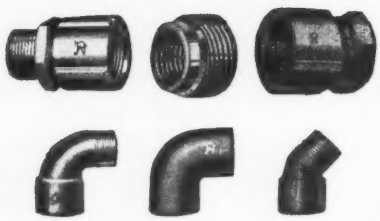
For a Bigger Profit Margin

Assemble-it-yourself for a bigger profit margin, or sell as is and let your customers do the assembling. Easily put together. Save the difference in shipping and high cost labor. Beautifully designed, quiet, efficient. Write today for circular showing sizes and prices.

S. J. STEWART [ELECTRIC]

527-31 St. Joseph St. New Orleans 13, La.

Conduit Unions
Reducing Bushings
Conduit Elbows



Pylet Conduit Unions are available in a full range of standard sizes, male and female, and 90 degree male elbow types. Unions are available in two types—explosion-proof and general purpose. Reducing bushings are available in 46 sizes.

Conduit Elbows and Tees are explosion-proof and dust-tight and are available in many standard sizes, female, male and female types, 45 and 90 degree elbows.

The Pylet line also includes: Pipe Plugs, Fixture Pendant Loops and Hooks, Messenger Wire Conduit Support Clamps with and without fluorescent fixture hanger hooks.

Consult your Pylet Catalog for complete listings.

1897 • FIFTIETH ANNIVERSARY • 1947

THE PYLE-NATIONAL COMPANY
1354 N. Kostner Avenue, Chicago 51, Illinois

combinations consistent with quality service at minimum cost.

General Electric first developed package substations during the war when installations were made for both the Services and private industry. Operating data and other experience gained from these first "tailor made" units was incorporated into the package substations that are now being manufactured by the company on a production basis.

Thirty photographs showing typical arrangements are displayed along with a one-line diagram of the system in a 78-page, four-color publication (GEA-4500) that is available upon request from the General Electric Company.

Display Arranged For Demonstration

(Continued from page 39)

booth carries 74 outlets for connecting as many lamps which can be lighted singly or all at one time. They are always ready for switching on at the will of the shopper or the appliance salesman.

Each of the three streamlined demonstration kitchens features a different line of cabinets and major appliances. In these kitchens, or on the floors conveniently near, are electric washers, ironers, dryers, home freezers, mixers, blenders, and roasters—all hooked up and ready to operate at the push of a button or switch. In short, everything is at hand ready to begin doing house work electrically under conditions like those which would obtain if the appliances were installed in the prospects's own homes.

It is not surprising that the management reported almost unbelievably heavy sales right off the floors on the opening day. Several carloads of appliances and equipment were sold on that day, the management reports, and sales are holding up at high levels.

The Cullen's management did not have to be sold on the idea that liberal use of electricity brings quick easy sales. These men had learned of this in advance and needed only the guiding hand, and skilled knowledge of electrical contractor and the electrical supply houses, and the engineering services of the Oklahoma Gas and Electric Co., to induce them to make the heavy investment in its new, modern shopping center, with electricity doing most of the heavy sales work for them.

Key men in Cullen Lumber Company, which has operated lumber yards and building supplies stores for many years in Oklahoma City, before entering the electrical merchandising

Electrical Exhibits Announced

Reservations are now being accepted for exhibit booth space for the 19th Annual Meeting of the Southern Section, IAEI.

The 19th Annual Meeting of the Southern Section, International Association of Electrical Inspectors, to be held at the George Washington Hotel, in Jacksonville, Florida, October 27-29, 1947, will be the first such meeting to sponsor an electrical exhibit since before the war

The arrangement of booths is such that exhibitors will be assured of good attendance. The meeting will be held in the new auditorium of the hotel which has a seating capacity of 2,200. All but five of the 38 booths available will be arranged around the three walls of the auditorium where the meetings will be held. The other five booths are to be located in the lobby of the auditorium.

All booths are of uniform size, measuring 8 feet in width and 6 feet in depth. The charge for all booths for the duration of the meeting will be $25.

Reservations for space should be addressed to:

Mr. W. A. Stall, Chairman
19th Annual Meeting, Southern Section, IAEI
Room 101, Engineers Building Jacksonville 2, Florida

field, include: Harry Cullen, owner and general manager; Walter Reeves, general sales manager; and C. A. Minor, Jr., merchandise manager.

Report on Trade Discount Survey

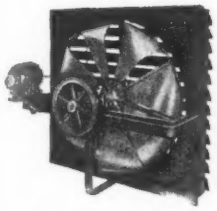
(*Continued from page 37*)

businessman in the country who thinks the OPA ever knew anything about setting up a proper discount schedule. As early as August, 1946, the National Electrical Retailers Association warned the OPA that if margins were left at the badly depressed level arbitrarily set up by a government agency which had no knowledge of the industry's postwar operations, the whole effect would be disastrous. Present conditions prove that warning was right, and certainly any manufacturer who tries to duck behind the OPA screen must be awfully weak, because many of our discounts, as predicted, became worse the instant OPA was lifted."

Regarding other government controls and their effects, Manag ng Director Simpson cited the unfair, discriminatory Federal Excise "nuisance" tax imposed upon some appliances and radios. As an example, he emphasized that while irons are subject to the tax, ironers are not. He indicated that NERA is fully cognizant that this tax is ridiculous and that it confuses the entire price structure of the industry. The National Electrical Retailers Association, he promised, will take immediate steps to join with other segments of the industry in advocating the Federal Excise Tax removal.

It is the opinion of the NERA

Here's How to Lick that Hard Ventilating Job!



Sizes 18" to 72"

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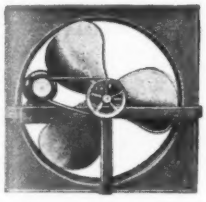
EXHAUST FANS

***for* industrial plants and various installations where abnormal ventilating requirements exist such as . . .**
• Stagnant Air • Excessive Heat • High Humidity • Chemical Fumes • Severe Smoke.



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Utility
EXHAUST FANS

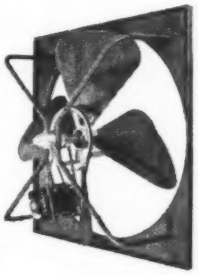
A sturdy fan to fill a variety of needs. For homes . . . for commercial and light industrial uses.

Write for information.

MARTIN Fan & Blower Co.
4632 West 21st Place — Chicago 50, Illinois
Lawndale 8474-5-6. — Long Distance Olympic 5252

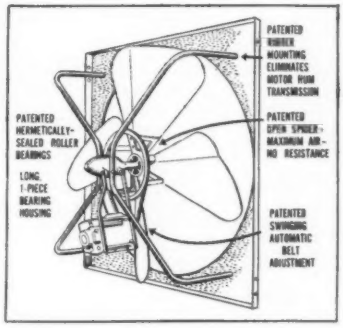
Try to Match this

PERFORMANCE, CONSTRUCTION, *Sales Appeal*



"A Breeze" to Sell

Imagine an attic fan with these features; no oiling, no belt adjustment or alignment, no motor hum transmission, long life. Well, it's here and it's your chance to cash in on an item that is a breeze to sell. The fan with patent features.


PATENTED RUBBER MOUNTING ELIMINATES MOTOR HUM TRANSMISSION
PATENTED SPEN SPIDER - MAXIMUM AIR - NO RESISTANCE
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PATENTED HERMETICALLY-SEALED ROLLER BEARINGS
LONG 1-PIECE BEARING HOUSING

Immediate delivery on complete 42" fan chassis less motors. Limited supply of fans with motors. Any 1/4 or 1/3 h.p. motor can be easily installed. Write today for folder giving full particulars on this revolutionary fan.

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Two valuable booklets available with Electrical South.

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Grant Building — Atlanta 3, Ga.

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General Purpose Solderless Ground Clamps

This brass malleable clamp takes solid wires from No. 8 to No. 4 inclusive. Fastening device consists of a 3/8" bolt with a 7/32" hole. This fastening method makes a positive and simple connection.

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BULLETIN 15

which illustrates our complete line.

THE
M. & W. ELECTRIC
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COMPANY
INCORPORATED

EAST PALESTINE, OHIO

Committee that manufacturers who do not show sufficient consideration of the dealer's position to see that dealer trade and cash discounts are passed on by distributors are not co-operating to the extent they should, if they wish to maintain good dealer relations. In instances where manufacturers have left the matter of trade discounts up to distributors, the NERA Committee's investigation reveals the discounts are considerably under 40%.

Said Julius Kovach, of Paramount Good Housekeeping Shop, Racine, Wisconsin, "It is evident from the NERA survey that many manufacturers allow their distributors actually to control, not only the retail prices, but the dealer margin of profit as well.

"We of the electrical retail industry believe that these manufacturers would do well to co-operate with NERA in eliminating this condition. Not only will such co-operation build them a stronger, more dependable dealer organization, but it will also create the essential good will between dealers and manufacturers that is so vitally important in the appliance picture, in order to elevate and maintain it at a high level of standards of business enterprises in these United States."

Some manufacturers have also taken the position, the Committee reported, that the 2% cash discount is out of proportion in light of the current "low cost" of money. Money is never cheap for the smaller retailer, the Committee emphasized, even though it may be for large borrowers. They further stated that even when money is high, the condition does not necessarily make for a higher discount.

Regarding the entire question of distributor relations, one national sales organization executive stated, "I think NERA does well to raise this question, because I foresee in the establishment of uniform national prices on advertised brands a plan to hold retailers within very narrow limits."

According to information received by the NERA Committee, the picture in the radio industry is by far the most lamentable. One large radio manufacturer had retail trade discounts in 1941 ranging from 34.3% to 46%. However, in 1946, in spite of the competitive picture on radios, this same manufacturer's discounts ranged from 20.08% to 37%. Several other radio manufacturers' discounts were found by the Committee to be in the same category.

Electric range discounts in the pre-war era averaged 40%, according to the Committee, but now one dealer reports that on the first and only electric range this company has produced in 1946, the discount is 33.6%. The Committee feels that such a figure is all the more regrettable because of the fact electric ranges have been the most neglected item in the industry from the standpoint of consumer promotion.

Refrigerators, which have always lagged behind other appliances in regard to discounts, are in an even worse position than prewar, the Committee reported. An analysis of a representative firm's discount structure showed that in 1941 the discount was from 30% to 35.4%, but of three models announced to date, the discount is from 28.7% to 32.4%. Since the best minds in the industry now estimate that approximately 80% of all new refrigerators sold will involve a trade-in, and trade-ins have in the past proved expensive for dealers, discounts on refrigerators must of necessity come up to the minimum 40% because of this increasing problem, the Committee stated.

On washers, generally speaking, and on small appliances, the discounts are likewise lagging, they said.

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ONLY SIX SIZES
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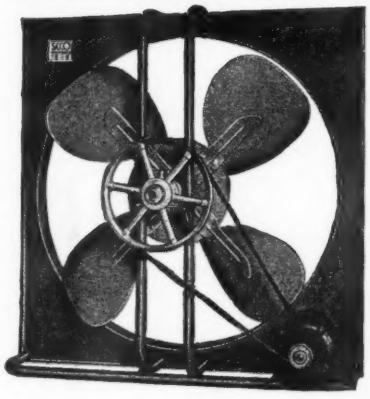
Better than ever

Its simplicity of design permits easier installation in Walls, Attics, or Penthouses.

SECO Fans deliver a maximum volume of air at slow speed, with extreme quietness.



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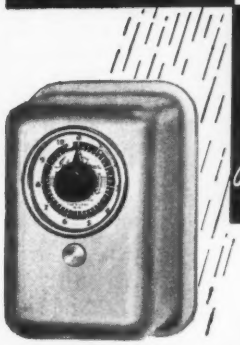

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BUILDERS OF ELECTRICAL EQUIPMENT SINCE 1903

Electric Radiant Heating Wallboard

(Continued from page 36)

"You don't have hot spots. The heat is uniformly spread over the entire room. It is not like a radiator or register where heat radiates from one point.

"There is no draft, which is much more helpful."

On the coldest day of the year, when it was five above zero outside, the engineers raised the temperature to 80 inside, testing the capacity of the system.

Ceiling heat operates on the same principles as the sun, acording to R. D. Gartrell, development manager of the U. S. Rubber Co.'s Passaic, N. J., plant, under whose supervision the product was perfected.

"The heat travels in waves that are absorbed by occupants of the house and solid objects nearby, including furniture, floors and walls," Mr. Gartrell said. "The air itself remains relatively cool, akin to the outdoor air on a sunny autumn day. In a room heated by conventional means, the human body loses heat to the cold walls and other surrounding surfaces. With radiant heating, the loss of body heat is greatly reduced or stopped completely, enabling the normal metabolism to generate enough heat for physical comfort."

Development of electrified ceilings grew out of wartime research on conductive rubber. Reversing nature, chemists transformed rubber from an insulator to an electrical conductor by adding high percentages of finely-ground carbon black, the material found in dry cell batteries. During the war conductive rubber was used in heating pads to keep ice off the propeller blades and wing guns of airplanes. Since the war, reserach has continued on peacetime applications. The first application experimentally was for heating chicken brooders. Then the heating of a home was tried.

The experimental home has a bedroom, living room, combination dining room and kitchen, hall, and glass-enclosed porch.

A garage is attached at the side, so that it is virtually a part of the house.

The house has a concrete floor, with base of vermiculite concrete, four inches thick. A new type of hollow cinder block was used in construction, and rock wool was poured into the blocks, which is something new in insulation.

All of Fonde's homes are made successful with adequate insulation. He has always placed great stress on that. Rock wool, glass wool, and other forms of insulation are used.

In the electrified ceiling home, there is an asphalt roof. Under it is eight inches of rock wool. Below the rock wool are the radiant heat panels.

"I believe that electric heat for homes will spread over the nation as insulation and proper home construction is better understood and applied," says Mr. Fonde. "It is true that the Tennessee Valley area provides favorable rates for electric heat, but one should not look at the elec-

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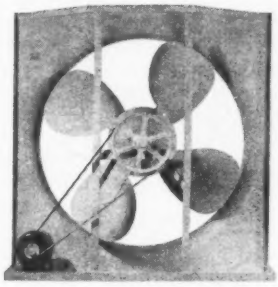

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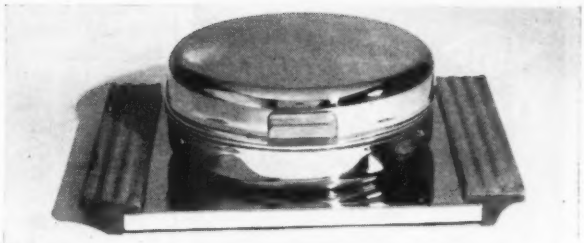

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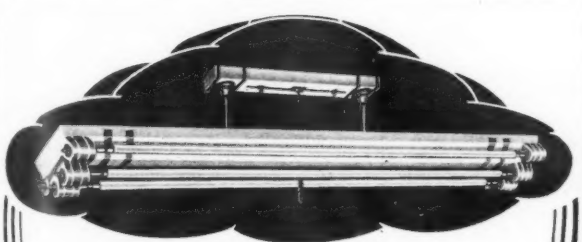

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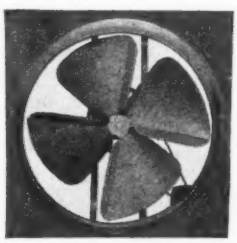

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tric rates alone. It is the number of kilowatt hours required per season that counts.

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"In many instances, in Knoxville, the electric heating costs have been less than that to heat other homes of similar size with coal and Knoxville has low coal costs compared to other cities.

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New Cinder Block Used

Fonde and Bartling have done much research with materials that will produce good, safe low-cost homes. The cinder block used in the test home is an example. It is of new design, with minimum of cross section and can be filled with rock wool or vermiculite insulation to produce a thoroughly insulated wall.

Storm windows are to be provided, although the home was comfortable without them in near-zero weather.

Researchers say that the rubber heating element has one feature which other forms of panel or radiant heating do not have. They say it is the only such element which is on the surface of the area to be heated and does not have to heat a large mass of plaster or concrete before giving off useful heat.

What do the occupants of the test house themselves think of their new heat?

"Just wonderful," replied Mrs. Harrison J. Hines, and her husband concurred. "The home is comfortable and clean. There is no dirt."

Engineers say that electrified ceilings "offer one of the most satisfactory forms of home heating ever developed" and they predict its use in other localities.

The United States Rubber Company officials said that in addition to ceiling panels, portable conductive rubber heaters are being developed in the form of decorative screens to provide temporary heat in bathrooms, bedrooms, and other parts of the house inadequately heated by present methods. Shortage of production facilities will limit the supply of the heaters and of the ceiling panels for several months.

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The Tennessee Valley Authority has a vacancy for an inductive coordination engineer in its power program, located in Chattanooga, Tennessee.

This position is classified as Electrical Engineer II with an entrance salary of $3420 per annum based on a 40-hour work week schedule, and offers periodic within-grade increases and opportunities for promotion.

Candidates should have at least two years of engineering education acquired at a recognized college or university, ability and interest in mathematics, and two or more years of experience in power and communication work. It is desirable that experience include work on inductive coordination and interference problems.

Interested persons should write the Personnel Department, Tennessee Valley Authority, Knoxville, Tennessee.

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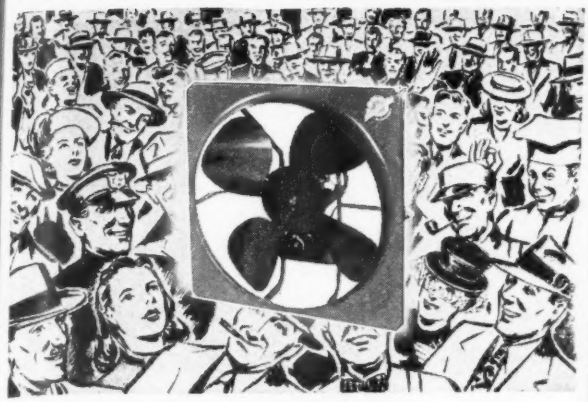

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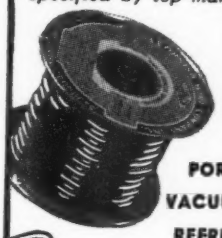

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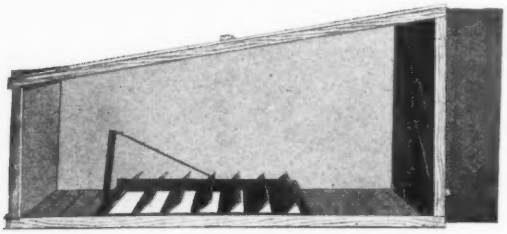

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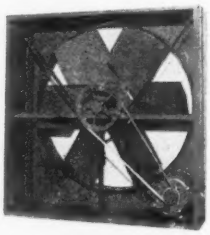

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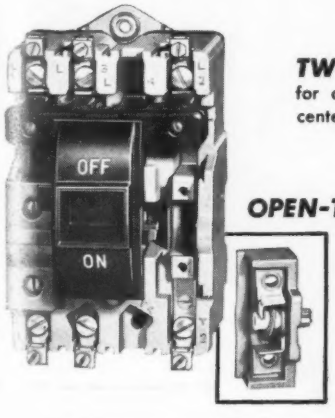

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for complete information, write Square D Company, 4041 N. Richards Street, Milwaukee 12, Wis.

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DETROIT • MILWAUKEE • LOS ANGELES

This switch says plenty by keeping silent

Shhh! Here's silence that's really golden—for you. Quieter than the drop of a pin (you can hear *that*), yet the G-E Silent Switch's very lack of noise is one of the loudest-talking salesmen you can have on the job.

Think a minute. What builds your customers' confidence in you? It's your reputation and the quality of work you do, of course. But did you ever stop to consider how important, too, is the reputation and performance of the wiring you install?

That's where G-E Silent Switches come in, and all the other products in the full line of G-E wiring devices. They are the *visible evidence of quality* on every job. Their name signifies long life and reliable service to every user. Why not install General Electric throughout, and let that big name go to work for you?

WIRING DEVICES by

GENERAL ELECTRIC

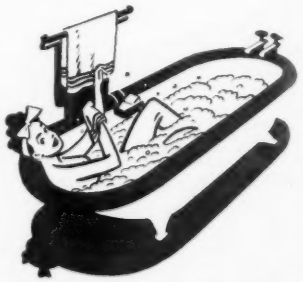
say "G.E." and he'll agree

Wiring Briefs from your G-E Distributors

Are you familiar with the great variety of products in General Electric's full line of wiring devices? Do you know the interesting features that help to make them easy to use and easy to sell? Keep an eye on this column, and you may discover a lot of useful facts and information. We'll keep dishing them out for you.

Now, the entire Watch Dog* line of starters meets a new, high-temperature rating. Maximum recommended operating temperature has been increased from 140 F to 160 F. This is important in installations that are enclosed, or that are subject to high ambient temperatures.

Whether you are already on the profitable fluorescent lighting bandwagon, or just trying to hitch a ride, you need this new folder on "G-E Fluorescent Accessories." It shows you—and your customers—what products G.E. is making, and how you both can use them to advantage. Tells about Watch Dog and standard starters; Slimline, Circline, and Twin Turret Lampholders; and fluorescent starters and switches. Ask us for a supply today.



A certain well-known soap has nothing on those boys in G.E.'s "fuse factory." Do you know that the zinc used in General Electric fuse links has to be *99.98 per cent pure* by laboratory test? Good point to remember when you order the next batch of fuses.

If you want additional information on these, or other G-E Wiring Devices, ask us—your G.E. Merchandise Distributor—or write to Section D50-524, Appliance and Merchandise Dept., General Electric Co., Bridgeport 2, Conn.

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